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UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
WASHINGTON, D. C.  
H. H. BENNETT, CHIEF

**HYDROLOGIC STUDIES**

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**COMPILATION OF  
RAINFALL AND RUN-OFF FROM THE WATERSHEDS  
OF THE NORTH APPALACHIAN  
CONSERVATION EXPERIMENT STATION**

**ZANESVILLE, OHIO**

**1933-38**

**SCS-TP-26  
August, 1939**





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RAINFALL AND RUN-OFF FROM THE WATERSHEDS  
OF THE NORTH APPALACHIAN  
CONSERVATION EXPERIMENT STATION  
ZANESVILLE, OHIO

1933-38

by

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and  
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Zanesville, Ohio

Prepared under the direction of  
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REPORT ON HYDROLOGIC INVESTIGATIONS ON SMALL  
WATERSHEDS AT THE CONSERVATION EXPERIMENT  
STATION, SOIL CONSERVATION SERVICE,  
ZANESVILLE, OHIO

I. The Experiment Station

The Soil and Water Conservation Experiment Station at Zanesville, Ohio, was established in the fall of 1932 under the jurisdiction of the Bureau of Chemistry and Soils and the Bureau of Agricultural Engineering, of the U. S. Department of Agriculture in cooperation with the Ohio Agricultural Experiment Station. The land occupied by the Station was purchased specifically for its location by the State of Ohio. The Zanesville Chamber of Commerce, through its executive secretary, Bryce Browning, materially assisted H. H. Bennett of the Bureau of Chemistry and Soils and G. W. Conrey of the Ohio Agricultural Experiment Station, in the selection of the tract and was instrumental in the station purchase. In April 1935, the station was transferred from the Bureaus of Chemistry and Soils and Agricultural Engineering to the Soil Conservation Service.

Acknowledgment is made to F. E. Hardisty and V. D. Young for their work of installing the measuring equipment on these watersheds and collecting the early basic records. Recent records have been collected by Russell Woodburn, project engineer, who also directed the field W.P.A. men in





compiling the records for this report. L. L. Harrold and W. D. Potter of the Washington office, Hydrologic Division, prepared the instructions for compiling the data and Mr. Harrold initiated the compilation work in the field and reviewed the data before publication.

## II. Physical Characteristics of the Station

The Station tract consists of approximately 250 acres on the upper reaches of Timber Run, a small tributary of the Licking, which river joins the Muskingum at Zanesville. The Station is located about 8 miles northwest of Zanesville, Muskingum County, Ohio. It is hilly in topography, ranging in elevation from about 880 feet to 1,040 feet above sea level. The soil is chiefly Muskingum silt loam. Associated types are Wellston and Eifort silt loams.

## III. History and Description of the Watersheds

Three watersheds were established early in the history of the Station to study the effect of land use on run-off and erosion. Run-off records were begun July 1, 1933.

The Pasture Watershed. This watershed consists of 3.57 acres located near the northwest corner of the Station tract. The area of the watershed is somewhat funnel-shaped and convex in surface configuration. The boundary is a low earth dike. Drainage is by natural flow to a mild draw extending to the southeast corner, where run-off is recorded.



There have been no changes in boundary. This watershed has been in grass since the inception of the experiment. It has been limed and has received standard applications of pasture fertilizer. The vegetal cover has been good throughout the period of records.

The Cultivated Watershed. This watershed contains 2.55 acres and is located near the southwest corner of the Station tract, approximately one-half mile south of the pasture watershed. It is an elongated pear-shaped area bounded by earth dikes. The drainage is overland to several decided depressions which unite a short distance above the flume.

The area is unterraced and is farmed in a 3-year rotation of corn, wheat, and meadow. It was in corn in 1936 and will again be in corn in 1939. Cultivation is approximately on the contour but may diverge several percent from contour over the ridges between depressions.

The Wooded Watershed. The wooded watershed of 2.23 acres is a fan-shaped area bounded by an earth dike. The drainage is overland to a mild draw which leads to the flume near the southwest end of the area. The forest cover is largely second growth hardwoods. (See Appendix for detailed report of Forest Survey of this watershed.)

The average slope of each watershed is approximately 14 percent.



#### IV. Instrumentation

Rain gages - Standard and Recording. For description and history of the rain gages, see table 1. There was only one change in location of gages, as indicated in the tabulation.

Parshall flumes. For description and history of flumes, see table 2. There were no essential changes in flumes or recorders during the period of record.

Ramser silt sampler. The silt box on each watershed is equipped with a Ramser silt sampler. When the box fills and flow starts over the weir, a small stream is diverted through the silt sampler into a tank. The density of this "waste water" taken from the tank is determined by the following procedure: A sample of known volume is taken from the tank and treated with a 0.10 percent solution of alun sulphate to precipitate the suspended material. The clear water above the precipitated silt is decanted and the silt is evaporated to dryness in an oven and weighed to the third decimal. From this weight and the volume of the sample, the pounds of silt per cubic foot of waste run-off are calculated. The amount of waste run-off represented by this density, is the difference between volumes calculated from the flume record and volume of the silt box. The amount of soil remaining in the silt box is determined by measuring the



volume of the supernatant water and sampling it for analysis, and by weighing, voluming and sampling the heavier material or sludge.

#### V. Graph and Tabulation Sheets

Rainfall. All storms were tabulated on form SCS 345 and about 10 or 12 of the more important run-off producing storms each year were selected for detailed analysis. In general, only those storms which totaled over an inch or more rain were plotted. Some smaller storms were included when high intensities occurred.

The rain gage charts were analyzed on the basis of break points in the curve rather than equal time intervals. Intensity was calculated between each two break points in the amount curve. In most cases, the amount of rainfall was taken from standard gages on or near the watershed. Since the A. E. recorder was used for intensity analysis, the recorder total was frequently used when it did not vary appreciably from the standard gage totals. In a few cases, recorder totals were necessary as the rain being analyzed as a part of several rains, handled by one reading of the standard gages.

Surface run-off. Depths of run-off and time were taken from the recorder charts and tabulated for calculation. A standard Parshall rating table was used to convert the





stages to rates of run-off in c.f.s. Rate of run-off was plotted against time on the graph sheets and the area under the resulting hydrograph was determined. One inch vertically equalled a run-off rate of one c.f.s. and 1 inch horizontally represented 20 minutes. In determining the area under the curve, it was necessary to count the number of small squares in each vertical column 0.1 inch wide and these were recorded at the foot of the column. In principle, the area was determined in terms of the small squares, each 0.01 square inch in size. The number of squares were subtotaled consecutively through the run-off and recorded below the graph at points of major change in the run-off rate. These cumulative figures for number of squares were transposed into surface inches by multiplying by the following constants:

Cultivated Watershed - 0.001298

Pasture Watershed - .000926

Wooded Watershed - .001484

The resulting values permitted the plotting of a cumulative run-off curve in inches for each area.



Table 1

Project Ohio-R-1 Zanesville, Ohio

WATERSHED INSTRUMENTATION  
RAIN GAGES

| Area                 | Gage<br>No.       | Type                              | Date of<br>Instal-<br>lation | Scales: 1" on<br>Chart Equals |                        | Distance to<br>Nearest<br>Obstacle | Height of<br>Obstacle<br>Above Top<br>of Rain-<br>gage | Remarks          |
|----------------------|-------------------|-----------------------------------|------------------------------|-------------------------------|------------------------|------------------------------------|--|------------------|
|                      |                   |                                   |                              | Time                          | Rain-<br>fall<br>Depth |                                    |  |                  |
|                      |                   |                                   |                              | <u>Minutes</u>                | <u>Inches</u>          | <u>Feet</u>                        | <u>Feet</u>  |                  |
|                      | A. E.<br>Recorder | 12-hour<br>Fergusson<br>Recording | 1933                         | 62.5                          | 0.67                   | No<br>Obstacles                    | No<br>Obstacles  | For all<br>Areas |
| Cultivated           | 15                | Standard                          | 1933                         | -                             | -                      | -                                  | -  |                  |
| Pasture              | 7 & 8             | do                                | Jan.<br>1937                 | -                             | -                      | -                                  | -  |                  |
| Wooded               | 11                | do                                | 1933                         | -                             | -                      | -                                  | -  |                  |
| Pasture <sup>1</sup> | 3                 | do                                | 1933                         | -                             | -                      | -                                  | -  |                  |

<sup>1</sup>Old standard No. 3 was used for pasture rainfall until the installation of No. 7 and No. 8 in January 1937. This gage was in front of foreman's residence, about 1,000 feet south of area.



Table 2

Project Ohio-R-1 Zanesville, Ohio

WATERSHED INSTRUMENTATION - (Installed Summer, 1933)  
Flumes and Silt Samplers

| Watershed  | Parshall Flume |             | Bristol Water-Stage Recorder     |                | Ramser Silt Sampler:<br>Capacity of silt box | Frequency of field checks |              |              | Maximum stage |
|------------|----------------|-------------|----------------------------------|----------------|--|---------------------------|--------------|--------------|---------------|
|            | Size           | Materials   | Scales: Smallest division equals | Zero on Gage   |  | Flume dimensions          | Settle-ment  |              |               |
|            |                |             | Gage height                      |                |  |                           |              |              |               |
|            |                |             | <u>Feet</u>                      | <u>Minutes</u> | <u>Feet</u>                                  | <u>Cubic feet</u>         | <u>Years</u> | <u>Years</u> | <u>Years</u>  |
| Cultivated | 2              | Sheet metal | 5                                | 0.02           | 900  | 1                         | 1            | 1            | 1.5           |
| Pasture    | 1              | do          | 5                                | .02            | 150  | 1                         | 1            | 1            | 1.5           |
| Woods      | 1              | do          | 5                                | .02            | 150  | 1                         | 1            | 1            | 1.5           |



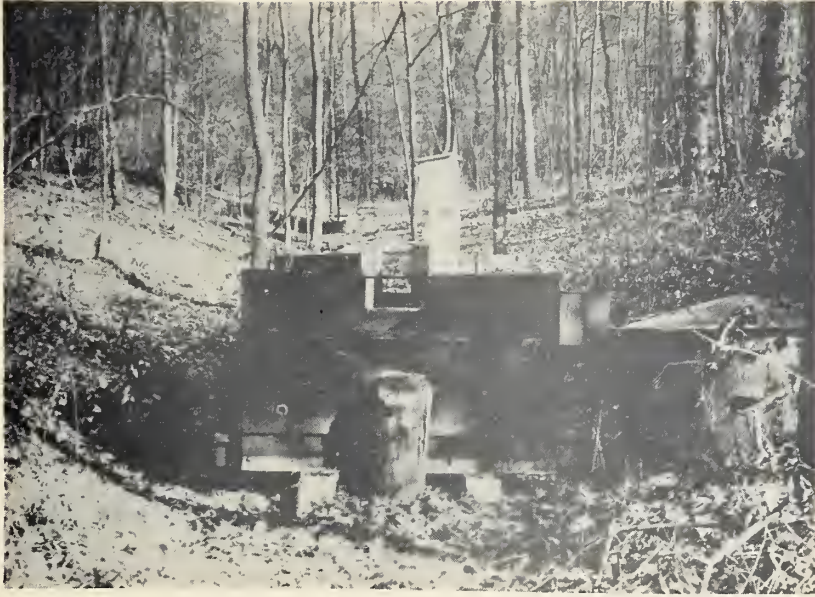


Plate I.      The Wooded Watershed and Measuring Equipment



Plate II.      The Pasture Watershed







Plate III. Run-off from Cultivated Watershed taken just above the flume during a rain of peak intensity of 3 inches per hour.



Plate IV. Run-off from Cultivated Watershed taken just above the flume immediately following a rain of peak intensity of 3 inches per hour.





Plate V.



Plate VI. Two Views of the Cultivated Watershed taken from near the outlet.





## APPENDIX A

Description of Wooded Watershed<sup>1</sup>  
Northwest Appalachian Conservation Experiment Station  
Zanesville, Ohio                      June, 1939

N. L. Eriksson<sup>2</sup>

.....

The forested watershed is a part of the North Appalachian Soil and Water Conservation Experiment Station, located in Hopewell Township, Muskingum County, Ohio, about 8 miles northwest of Zanesville.

For the purpose of carrying out experiments pertinent to soil and water conservation in collaboration with the U. S. Department of Agriculture, the State of Ohio purchased from the Boland family in 1932 the farm now comprising the experiment station. Prior to 1932, from the time it was first deeded to them about 100 years ago, the land had been continuously in possession of the Boland family.

The location of the wooded watershed is shown in Figure 1. The watershed has never been clear-cut. No sawlogs have been taken out since the last logging operation in 1910, and no record is

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<sup>1</sup>The survey of the wooded watershed was made in accordance with arrangements and instructions prepared by W. U. Garstka, Hydrologic Division, Soil Conservation Service.

<sup>2</sup>Forestry Division, Soil Conservation Service.



available of the quantity then harvested although stumps reveal that white oak was the chief species cut. Only a few trees, as required in farming operations, have been removed since 1910 and nothing has been cut since management was taken over by the Department of Agriculture.

Light grazing by sheep had been practiced by the former owners but the damage did not appear to be extensive. There has been no grazing since 1932. No evidence of fire was discovered by examination, and O. L. Boland, from whom the property was acquired, was of the opinion that it probably had never been burned over.

#### Watershed Description:

The watershed is roughly triangular in shape as shown on the map, Figure 4. It has a range of elevation from approximately 403 feet to 457 feet above sea level. An earth dike about 1 foot high has been constructed around the entire watershed, the enclosed area of 2.23 acres having an average slope of 14 percent. The topography is smooth, as indicated by the contours on topographic map, Figure 4. Rainfall data for the watershed is based on the records from rain gage #11 located at a point 250 feet northwest as shown on the map, Figure 4. The watershed is covered for the most part with typical Muskingum silt loam, small areas of the Smooth Phase and Mature Phase being found at the headwaters.

A run-off measuring station (shown in Plate I) provided with automatic run-off recording and erosion-measuring instruments has been in operation since July 1, 1933.

There are no trails or roads on the entire watershed.





Forest Growth:

The watershed, covered with an uneven-aged growth of mixed hardwoods, is treated in this report as a single unit, no stand differentiation being made. The crown canopy density was estimated to be about six-tenths in June 1939. A 2- to 3-inch depth of leaf litter forms a complete forest floor, no bare soil or rocks being visible even in the intermittent stream channel. A good crown canopy and the unbroken litter cover appear to inhibit the growth of all minor vegetation, there being but few weeds and shrubs. At the time of the survey (June) ferns and mosses were not in evidence and there was but a trace of mixed grasses and briers.

Apparently satisfactory reproduction of both the commercially valuable and of other species has taken place as is indicated by the relatively large number of trees in the small diameter classes. Black Cherry, Hard Maple, Hickory, Black, Red, and White Oaks, Ash, Elm, Sassafras, and Dogwood are well represented. Regeneration is light, probably because of the heavy canopy, and consists largely of the more tolerant species.

A very few vines - Grape, Smilax, and Virginia Creeper - listed in the order of prevalence, are found. But little evidence of tree disease and no signs of recent mechanical injury were observed. Some butt-rot was seen. Some large-size slash is still left from old logging operations. Several large overmature trees have fallen to the ground. A number of dead Chestnut trees still



remain standing and some trees in the small diameter classes, evidently killed by suppression, also remain standing; others have fallen.

Plates VII to X inclusive depict the appearance of the forest in summer and in winter.

Inventory:

In the early part of June 1933 a 100 percent inventory<sup>3</sup> was taken. This report presents only basic information and does not purport to be a detailed forest survey for which the time allotted (1 week) was not sufficient. All trees in the 1-inch diameter breast height (D.B.H.) class and over were tallied and a stand table (table 3) was prepared. Table 4 lists basal areas per acre as of June 1939:

---

<sup>3</sup>Detailed report and field notes are on file in the office of the experiment station at Zanesville.



FORESTED WATERSHED STAND TABLE, AREA 2.23 ACRES  
TREES BY SPECIES AND DIAMETER CLASSES

TABLE 3

Northwest Appalachian  
Conservation Experiment Station  
Zanesville, Ohio.

June 12, 1939  
N. L. Erikson

| DBH    | Red<br>Oak | Black<br>Oak | White<br>Oak | Hard<br>Maple | Soft<br>Maple | Elm | Hickory | White<br>Ash | Black<br>Cherry | Black<br>Oak | Beech | Ironwood | Sassafras | Dogwood | Shadbush | Dead* | Total<br>Live Trees |
|--------|------------|--------------|--------------|---------------|---------------|-----|---------|--------------|-----------------|--------------|-------|----------|-----------|---------|----------|-------|---------------------|
| 1      | 1          | 3            |              | 104           | 90            | 9   | 61      | 82           | 20              | 21           | 19    | 14       | 87        | 120     | 2        | 41    | 633                 |
| 2      | 1          |              |              | 60            | 16            | 8   | 23      | 33           | 21              | 7            | 15    | 7        | 56        | 85      |          | 27    | 367                 |
| 3      | 2          | 1            |              | 37            | 28            | 6   | 12      | 9            | 15              | 5            | 7     | 10       | 18        | 23      |          | 18    | 204                 |
| 4      |            |              |              | 23            | 33            | 4   | 7       | 10           | 13              | 3            | 4     | 13       | 17        | 12      |          | 10    | 171                 |
| 5      |            |              |              | 21            | 19            | 4   | 5       | 4            | 7               | 4            | 1     | 3        | 33        | 1       |          | 2     | 102                 |
| 6      |            |              | 1            | 6             | 12            | 2   | 4       | 3            | 7               | 1            | 6     | 2        | 21        | 3       |          | 1     | 61                  |
| 7      | 4          |              |              | 3             | 13            |     | 1       | 1            | 7               | 3            | 3     | 1        | 11        |         |          | 2     | 50                  |
| 8      | 1          |              |              | 7             | 3             | 3   | 2       |              | 3               | 2            |       |          | 7         |         |          | 2     | 32                  |
| 9      |            |              |              | 1             |               |     | 2       | 1            | 2               | 2            | 2     |          | 3         |         |          | 2     | 13                  |
| 10     |            |              | 1            | 2             | 1             |     | 3       | 1            | 4               | 4            |       |          |           |         |          | 1     | 16                  |
| 11     |            |              |              |               |               |     |         |              | 4               | 2            |       |          |           |         |          | 1     | 3                   |
| 12     |            |              |              |               |               |     |         |              | 2               | 1            |       |          |           |         |          | 1     | 3                   |
| 13     |            |              |              |               |               |     | 1       |              |                 |              |       |          |           |         |          | 1     | 2                   |
| 14     |            | 1            |              | 1             |               |     | 2       |              |                 |              |       |          |           |         |          | 1     | 4                   |
| 15     |            | 1            |              |               |               |     | 1       |              |                 |              |       |          |           |         |          | 1     | 4                   |
| 16     |            | 1            |              |               |               |     |         |              |                 |              |       |          |           |         |          |       | 2                   |
| 17     |            |              |              |               |               |     |         |              |                 | 1            |       |          |           |         |          | 1     | 4                   |
| 18     |            |              |              | 1             |               |     | 2       |              |                 |              |       |          |           |         |          | 1     | 4                   |
| 19     | 1          | 1            |              | 1             |               |     | 1       |              |                 |              |       |          |           |         |          |       | 1                   |
| 20     |            | 1            |              |               |               |     |         |              |                 |              |       |          |           |         |          |       |                     |
| 21     |            |              |              |               |               |     |         |              |                 |              |       |          |           |         |          | 1     | 1                   |
| 22     |            | 1            | 1            |               |               |     |         |              |                 |              |       |          |           |         |          | 1     | 1                   |
| 23     |            |              |              |               |               |     |         |              |                 |              |       |          |           |         |          |       |                     |
| 24     |            |              |              |               |               |     |         |              |                 |              |       |          |           |         |          |       |                     |
| 25     |            | 1            | 1            |               |               |     |         |              |                 |              |       |          |           |         |          | 1     | 1                   |
| 26     |            |              |              |               |               |     |         |              |                 |              | 1     |          |           |         |          |       | 2                   |
| 27     |            | 1            |              |               |               |     |         |              |                 |              |       |          |           |         |          |       | 1                   |
| 28     |            | 1            | 2            |               |               |     |         |              |                 |              |       |          |           |         |          |       | 2                   |
| 29     |            |              |              |               |               |     |         |              |                 |              |       |          |           |         |          |       |                     |
| 30     |            |              | 1            |               |               |     |         |              |                 |              |       |          |           |         |          |       | 1                   |
| 31     |            |              | 1            |               |               |     |         |              |                 |              |       |          |           |         |          |       | 1                   |
| 32     |            |              |              |               |               |     |         |              |                 |              |       |          |           |         |          |       |                     |
| 33     |            |              |              |               |               |     |         |              |                 |              |       |          |           |         |          |       |                     |
| 34     | 1          |              | 1            |               |               |     |         |              |                 |              |       |          |           |         |          |       | 2                   |
| Totals | 41         | 11           | 9            | 267           | 244           | 36  | 133     | 144          | 103             | 56           | 58    | 50       | 313       | 244     | 2        | 113   | 1684                |

\*Not classified by species.



TABLE 4  
 BASAL AREA PER ACRE - JUNE 1939<sup>1</sup>

| Species          | Basal Area     | Species      | Basal Area     |
|------------------|----------------|--------------|----------------|
|                  | <u>Sq. Ft.</u> |              | <u>Sq. Ft.</u> |
| Red Oak          | 4.5029         | Black Cherry | 6.2351         |
| Black Oak        | 7.6163         | Black Gum    | 4.4642         |
| White Oak        | 14.4049        | Beech        | 3.8038         |
| Hard Maple       | 8.6682         | Ironwood     | 1.3115         |
| Soft Maple       | 7.0554         | Sassafras    | 10.5346        |
| Elm              | 1.2795         | Dogwood      | 2.4283         |
| Hickory          | 7.6591         | Shadbush     | .0049          |
| White Ash        | 2.2225         | Dead         | 9.4882         |
| Total live trees |                |              | 82.1912        |

<sup>1</sup>Based on table 3.

As this was the first survey of the forest vegetation ever made in this watershed, growth rate was determined using the method outlined by Rupp<sup>2</sup> to ascertain whether a major change might have occurred in the character of the forest canopy since 1932, and to provide an additional means of comparison with other woodlands. Growth rate expressed as growth percent is given by diameter classes in the following table:

---

<sup>2</sup>"A simple method of securing the technical data necessary for the preparation of woodland management plans", Sept. 1938, (S.C.S. mimeo.)





TABLE 5  
GROWTH RATE BY DIAMETER CLASSES<sup>1</sup>

| Diameter Class            | 4   | 6   | 8   | 10  | 12  | 14  | 16  | 18  | 20  | 22  |
|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| No. of Trees <sup>2</sup> | 10  | 26  | 8   | 4   | 3   | 1   | 6   | 2   | 3   | 1   |
| Growth percent            | 7.4 | 5.0 | 4.4 | 1.9 | 3.0 | 2.1 | 2.6 | 1.3 | 1.9 | 1.7 |

<sup>1</sup>According to Pressler's formula based on a 10-year period.

<sup>2</sup>Number of trees used in this calculation.

This information indicates that the stand as a whole, without differentiation of species, appears to be growing at a fair rate of increment. Examination of the watershed, and information gathered in interviews with old residents and members of the experiment station staff, indicate that there has been no disturbing influence tending to affect the character of the forest growth throughout the period during which hydrologic records have been obtained from the watershed. This is substantiated by the general uniformity of the data shown in Table 6:



TABLE 6

RAINFALL, SURFACE RUN-OFF, AND SOIL LOSS FROM WOODED WATERSHED  
North Appalachian Soil and Water Conservation Experiment Station  
Zanesville, Ohio

Area 2.23 acres

Average slope 14 percent

Hydrologic records  
begun July 1, 1933Soil - Muskingum  
silt loam

| Year              | Rainfall      | Run-off       | Soil loss<br>per acre |
|-------------------|---------------|---------------|-----------------------|
|                   | <u>Inches</u> | <u>Inches</u> | <u>Tons</u>           |
| 1934              | 24.64         | 0.008         | 0.01                  |
| 1935              | 40.70         | .800          | .01                   |
| 1936              | 38.21         | .550          | .01                   |
| 1937 <sup>1</sup> | 42.61         | 4.300         | .05                   |
| 1938              | 39.30         | .570          | .003                  |

<sup>1</sup>Abnormal flood period of January 1937 accounted for 10.19 inches of rainfall, 3.72 inches of run-off, and 0.028 tons per acre of soil loss.



NORTHWEST APPALACHIAN CONSERVATION EXPERIMENT STATION  
ZANESVILLE, OHIO



PLATE VII

Summer view within wooded watershed

September 2, 1935



PLATE VIII

Winter view within the wooded watershed showing stream channel. The uneven-aged character of the mixed hardwood stand is apparent. Note the amount of slash and debris.

February 27, 1935





NORTHWEST APPALACHIAN CONSERVATION EXPERIMENT STATION  
ZANESVILLE, OHIO



PLATE IX

View within wooded watershed  
showing typical litter cover.

September 2, 1935



PLATE X

Photograph showing typical litter cover  
within the wooded watershed. The soil  
surface is entirely covered to a depth  
of 2 to 3 inches.

September 2, 1935





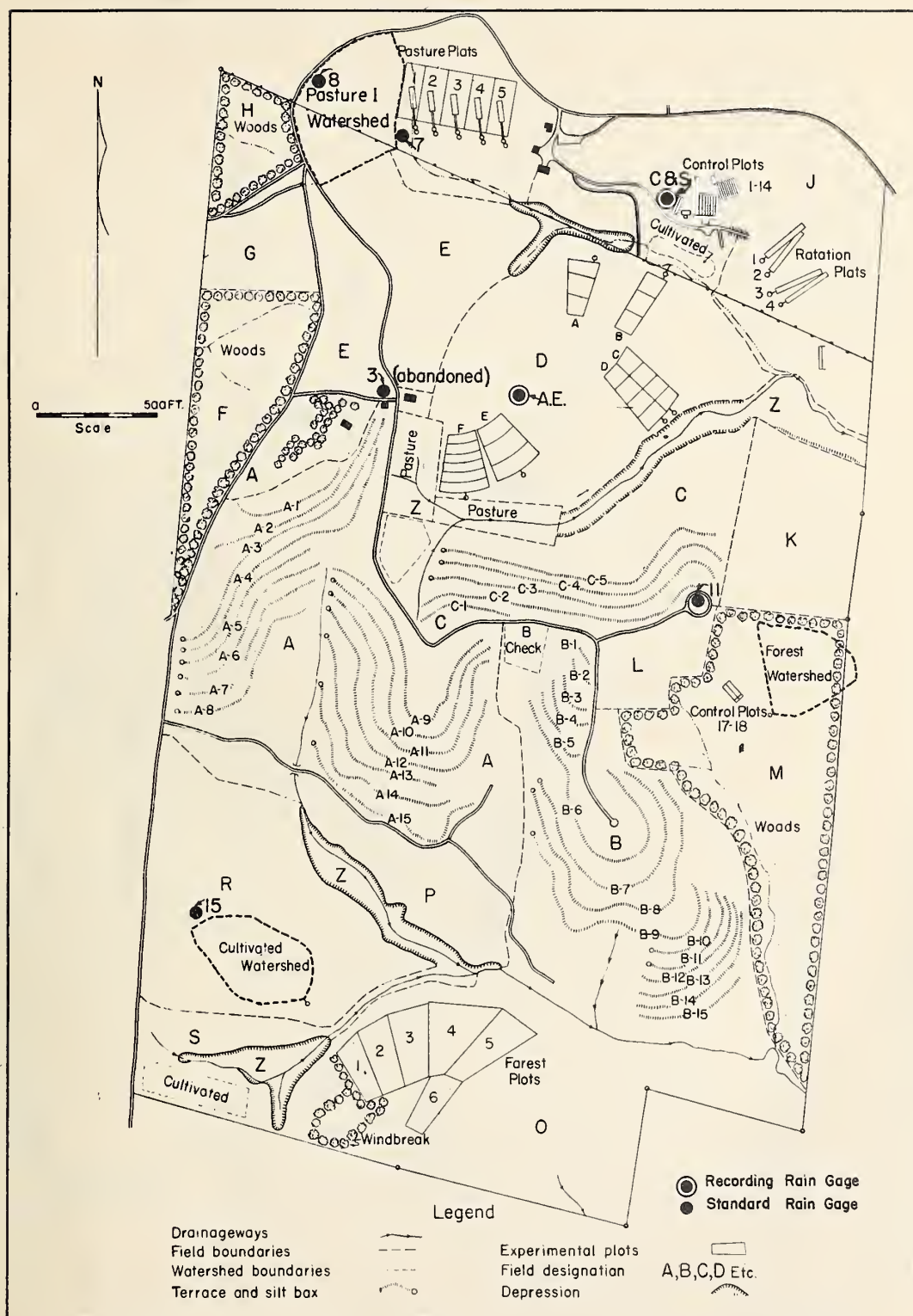
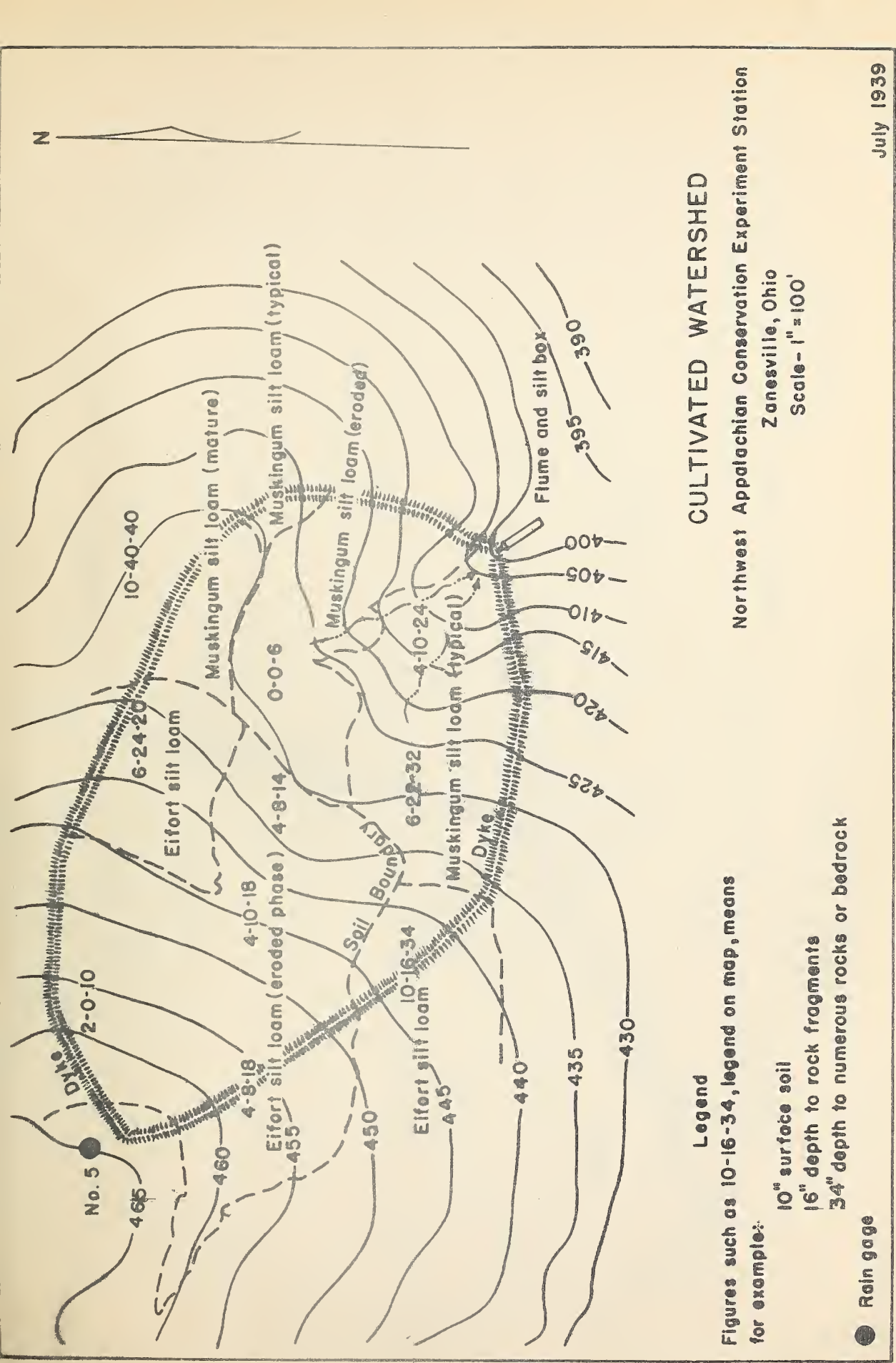


Figure 1 Map of the Northwest Appalachian Soil and Water Conservation Experiment Station showing location of the fields and experimental areas.





**CULTIVATED WATERSHED**  
 Northwest Appalachian Conservation Experiment Station  
 Zanesville, Ohio  
 Scale - 1" = 100'

July 1939  
 8-18-39 N-2799  
 REV. 9-18-39

Figure 2



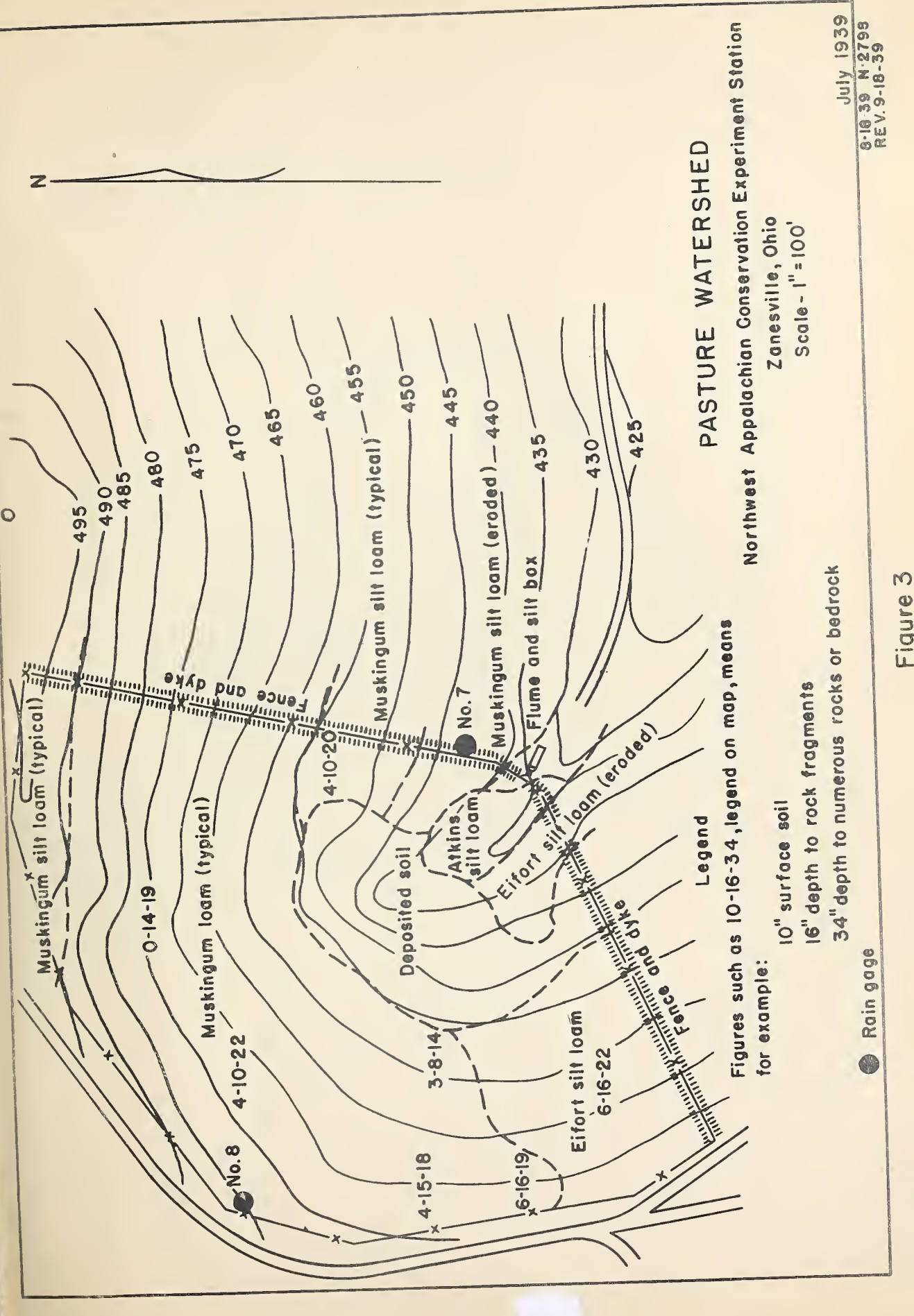


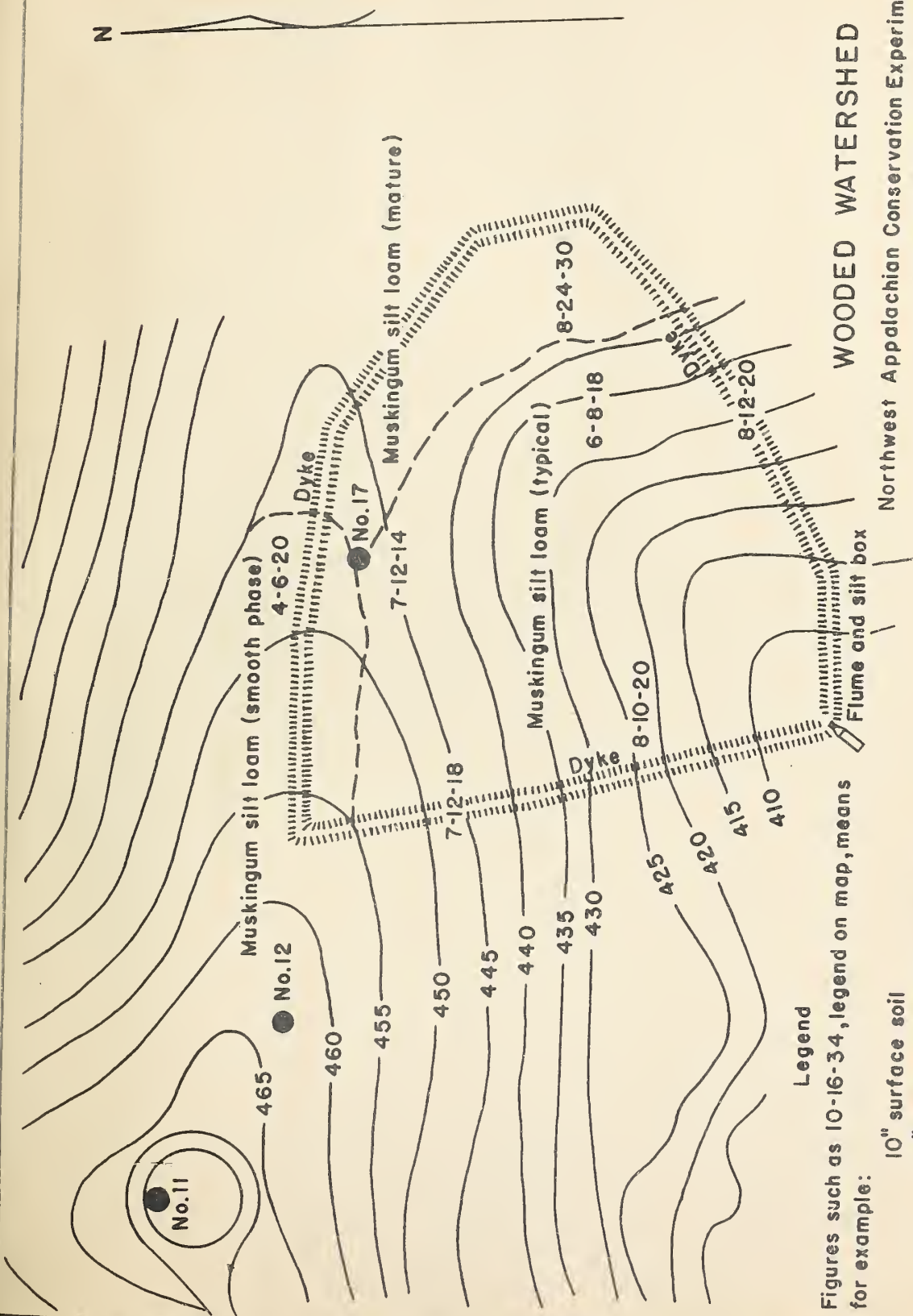
Figure 3





July 1939  
8-18 39 N-2797  
REV. 9-18-39

Figure 4



Legend

Figures such as 10-16-34, legend on map, means for example:

- Rain gage
- 10" surface soil
- 16" depth to rock fragments
- 34" depth to numerous rocks or bedrock

WOODED WATERSHED

Northwest Appalachian Conservation Experiment Station  
Zanesville, Ohio  
Scale - 1" = 100'









MONTH \_\_\_\_\_, 1934  
SHEET 1 OF 6 SHEETS

# RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

PROJECT ZANESVILLE, Ohio

U. S. GOVERNMENT PRINTING OFFICE 8-12348

All rainfall from A. B. Recorder

| U. S. DEPARTMENT OF AGRICULTURE, BUREAU OF PLANT INDUSTRY, BUREAU OF ENTOMOLOGY, BUREAU OF PLANT QUARANTINE, BUREAU OF PLANT PATHOLOGY, BUREAU OF PLANT PHYSIOLOGY, BUREAU OF PLANT REPRODUCTION, BUREAU OF PLANT VETERINARY MEDICINE, BUREAU OF PLANT ZOOLOGY, BUREAU OF PLANT GEOGRAPHY, BUREAU OF PLANT HISTORY, BUREAU OF PLANT CULTURE, BUREAU OF PLANT BREEDING |        |              |          |              |                    |                 |                             |                              |                              |                          |         |              |              |                 |                              |                |           |                        |                             |
|---|--------|--------------|----------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|--------------------------|---------|--------------|--------------|-----------------|------------------------------|----------------|-----------|------------------------|-----------------------------|
| WATERSHED   |        |              | RAINFALL |              |                    |                 |                             |                              |                              | TEMPERATURE (degrees F.) |         | RUNOFF       |              |                 |                              | RAINFALL MEANS | Soil Loss | CONDITION OF WATERSHED |                             |
| DATE  | Number | Acre (acres) | Gage No. | Begin (hour) | Duration (minutes) | Amount (inches) | 6 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) | Maximum                  | Minimum | Began (hour) | Ended (hour) | Amount (inches) | MAXIMUM RATE<br>Cu. ft. sec. | Time           | (inches)  |                        | (tons per acre)             |
| (1)   | (2)    | (3)          | (4)      | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)                     | (12)    | (13)         | (14)         | (15)            | (16)                         | (17)           | (18)      | (19)                   |                             |
| 1-14-34   | Cult.  | 2.516        | A. E.    | 5:25P        | 180                | 0.33            | 0.24                        | 0.20                         | 0.16                         | 45                       | 24      |              |              | 0.01            |                              |                | 0.32      | .009                   | Fall sown winter wheat      |
|   | Past.  | 3.568        | "        | "            | "                  | "               | "                           | "                            | "                            |                          |         |              |              | 0.07            |                              |                | 0.26      | .001                   | Blue Grass (good condition) |
|   | Woods  | 2.227        | "        | "            | "                  | "               | "                           | "                            | "                            |                          |         |              |              | 0.00            |                              |                | 0.33      | .000                   | Regrowth mixed hardwoods    |
| 1-17-34   | Cult.  | 2.516        | A. E.    | 9:10P        | 530                | 0.70            | 0.24                        | 0.24                         | 0.18                         | 50                       | 38      |              |              | 0.20            |                              |                | 0.50      | .566                   | all dormant                 |
|   | Past.  | 3.568        | "        | "            | "                  | "               | "                           | "                            | "                            |                          |         |              |              | 0.26            |                              |                | 0.44      | .963                   |                             |
|   | Woods  | 2.227        | "        | "            | "                  | "               | "                           | "                            | "                            |                          |         |              |              | T               |                              |                | 0.70      | .000                   |                             |
| 1-18-34   | -      | -            | A. E.    | 2 days       | Snow & Mist        | 0.08            |                             |                              |                              | 47                       | 31      |              |              | 0.0             |                              |                |           | 0.0                    |                             |
| 1-13-34   | -      | -            | A. E.    | 2 "          | " & Rain           | 0.08            |                             |                              |                              | 40                       | 25      |              |              | T               |                              |                |           | 0.0                    |                             |
| 1-22-34   | Cult.  | 2.516        | A. E.    | 9:10PM       | 280                | 0.13            | 0.24                        | 0.12                         | 0.08                         | 55                       | 29      |              |              | T               |                              |                |           | 0.0                    |                             |
|   | Past.  | 3.568        | "        | "            | "                  | "               | "                           | "                            | "                            |                          |         |              |              | T               |                              |                |           | 0.0                    |                             |
|   | Woods  | 2.227        | "        | "            | "                  | "               | "                           | "                            | "                            |                          |         |              |              | T               |                              |                |           | 0.0                    |                             |
| 1-28-34   | Cult.  | 2.516        | A. E.    | 6:30AM       | 480                | 0.18            | 0.12                        | 0.12                         | 0.04                         | 48                       | 37      |              |              | T               |                              |                |           | 0.0                    |                             |
|   | Past.  | 3.568        | "        | "            | "                  | "               | "                           | "                            | "                            |                          |         |              |              | T               |                              |                |           | 0.0                    |                             |
|   | Woods  | 2.227        | "        | "            | "                  | "               | "                           | "                            | "                            |                          |         |              |              | T               |                              |                |           | 0.0                    |                             |
| 2-2-34  |        |              | A. E.    | Snow & Mist  |                    | 0.07            |                             |                              |                              | 28                       | 6       |              |              | 0.0             |                              |                |           | 0.0                    |                             |
| 2-12-34   |        |              | A. E.    | "            | "                  | 0.04            |                             |                              |                              | 36                       | 18      |              |              | 0.0             |                              |                |           | 0.0                    |                             |
| 2-19-34   |        |              | A. E.    | "            | "                  | 0.07            |                             |                              |                              | 51                       | 17      |              |              | 0.0             |                              |                |           | 0.0                    |                             |
| 2-22-34   |        |              | A. E.    | "            | "                  | 0.04            |                             |                              |                              | 40                       | 16      |              |              | 0.0             |                              |                |           | 0.0                    |                             |
| 2-25-34   |        |              | A. E.    | "            | "                  | 0.14            |                             |                              |                              | 18                       | 3       |              |              | 0.0             |                              |                |           | 0.0                    |                             |
| NOTE: * Indicates storms for which rain and runoff analysis charts were made.   |        |              |          |              |                    |                 |                             |                              |                              |                          |         |              |              |                 |                              |                |           |                        |                             |

NOTE. \* Indicated storms for which rain and runoff analysis charts were made.



UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH 10, 19 34  
 SHEET 2 OF 6 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

Project Zanesville, Ohio

S. S. SEXTON, FIELD OFFICE 9-12393

| DATE       | WATERSHED |              | RAINFALL |                        |                    |                 | MAXIMUM INTENSITY            |                              |              |         | TEMPERATURE (degrees F.) |              |              | RUN-OFF      |      |                 | RAINFALL MONTHS RUN-OFF (inches) | SURF LOSS (tons per acre) | CONDITION OF WATERSHED   |
|------------|-----------|--------------|----------|------------------------|--------------------|-----------------|------------------------------|------------------------------|--------------|---------|--------------------------|--------------|--------------|--------------|------|-----------------|----------------------------------|---------------------------|--|
|            | Number    | Area (acres) | Oggs No. | Began (hour)           | Duration (minutes) | Amount (inches) | 5 minutes (inches per hour)  |                              |              | Maximum | Minimum                  | Began (hour) | Ended (hour) | MAXIMUM RATE |      | Amount (inches) |                                  |                           |  |
|            |           |              |          |                        |                    |                 | 15 minutes (inches per hour) | 30 minutes (inches per hour) | Ch. ft. sec. |         |                          |              |              | Time         |      |                 |                                  |                           |  |
| (1)        | (2)       | (3)          | (4)      | (5)                    | (6)                | (7)             | (8)                          | (9)                          | (10)         | (11)    | (12)                     | (13)         | (14)         | (15)         | (16) | (17)            | (18)                             | (19)                      |  |
| 3-2-4-34   | Cult.     | 2.546        | A. E.    | 10:45A                 | 23.0               | 0.64            | 0.60                         | 0.36                         | 0.24         | 53      | 16                       |              |              |              |      |                 |                                  |                           |  |
|            | Past.     | 3.568        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      |                 |                                  |                           |  |
|            | Woods     | 2.227        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      |                 |                                  |                           | Fall sown winter wheat<br>Good blue grass sod<br>Regrowth hardwoods<br>all dormant |
| 3-4-5-34   |           |              |          |                        |                    | 0.09            |                              |                              |              | 56      | 35                       |              |              |              |      |                 |                                  |                           |  |
| 3-5-34     | Cult.     | 2.546        | A. E.    | 1:45PM                 | 180                | 0.17            | No Record (Wind action)      |                              |              |         |                          |              |              |              |      | 0.65            | .677                             |                           |  |
|            | Past.     | 3.568        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      | 0.71            | .002                             |                           |  |
|            | Woods     | 2.227        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      | 0.90            | .000                             |                           |  |
| 3-7-34     |           |              | A. E.    | Snow                   |                    | 0.04            |                              |                              |              | 41      | 27                       |              |              |              |      |                 | .000                             |                           |  |
| 3-10-34    |           |              | "        | "                      |                    | 0.05            |                              |                              |              | 33      | 18                       |              |              |              |      |                 |                                  |                           |  |
| 3-14-34    | Cult.     | 2.546        | A. E.    | Rain & Snow            |                    | 0.12            |                              |                              |              |         |                          |              |              |              |      | 0.03            | 0.196                            |                           |  |
|            | Past.     | 3.568        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      | 0.17            |                                  |                           |  |
|            | Woods     | 2.227        | "        | "                      | "                  | "               | "                            | "                            | "            | 58      | 26                       |              |              |              |      | 0.17            |                                  |                           |  |
| 3-18-34    | Cult.     | 2.546        | A. E.    | Rain & Snow            |                    | 0.16            |                              |                              |              | 70      | 30                       |              |              |              |      | 0.15            | .003                             |                           |  |
|            | Past.     | 3.568        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      | 0.16            | .000                             |                           |  |
|            | Woods     | 2.227        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      | 0.16            | .000                             |                           |  |
| 3-26-34    | Cult.     | 2.546        | "        | 4:45AM                 | 435                | 0.36            | 0.24                         | 0.24                         | 0.12         | 43      | 19                       |              |              |              |      |                 |                                  |                           |  |
|            | Past.     | 3.568        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      |                 |                                  |                           |  |
|            | Woods     | 2.227        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      |                 |                                  |                           |  |
| 3-28-34    | Cult.     | 2.546        | A. E.    | 1:30AM                 | 495                | 0.33            | 0.24                         | 0.16                         | 0.14         |         |                          |              |              |              |      | 0.12            | .320                             |                           |  |
|            | Past.     | 3.568        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      | 0.33            |                                  |                           |  |
|            | Woods     | 2.227        | "        | "                      | "                  | "               | "                            | "                            | "            | 59      | 31                       |              |              |              |      | 0.33            |                                  |                           |  |
| 4-4-34     | Cult.     | 2.546        | A. E.    | 8:05AM                 | 185                | 0.20            | 1.20                         | 0.40                         | 0.20         | 78      | 43                       |              |              |              |      |                 | .000                             |                           |  |
|            | Past.     | 3.568        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      |                 | .000                             |                           |  |
|            | Woods     | 2.227        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      |                 | .000                             |                           |  |
| 4-5-6-7-34 | Cult.     | 2.546        | A. E.    | 5:50PM                 | 475                | 0.42            | 0.36                         | 0.20                         | 0.16         | 75      | 41                       |              |              |              |      |                 | .000                             |                           |  |
|            | Past.     | 3.568        | "        | (3 parts to this rain) | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      |                 | .000                             |                           |  |
|            | Woods     | 2.227        | "        | "                      | "                  | "               | "                            | "                            | "            |         |                          |              |              |              |      |                 | .000                             |                           |  |





UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH \_\_\_\_\_, 19 34

 SHEET 3 OF 6 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

 PROJECT Zanesville, Ohio

U.S. GOVERNMENT PRINTING OFFICE 8-1338

| Date    | WATERSHED |              | Gage No. | Began (hour) | Duration (minutes) | RAINFALL        |                             |                              | THUNDERSTORMS (approx. P.)   |         |         | RUN-OFF      |              |                   | RAINFALL MEASUREMENT (inches) | Run Loss (cub. ft. per acre) | CONDITION OF WATERSHED |
|---------|-----------|--------------|----------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|---------|---------|--------------|--------------|-------------------|-------------------------------|------------------------------|------------------------|
|         | Number    | Area (acres) |          |              |                    | Amount (inches) | 8 minutes (inches per hour) | 16 minutes (inches per hour) | 30 minutes (inches per hour) | Maximum | Minimum | Began (hour) | Ended (hour) | Amount (cub. ft.) | On ft. sec.                   | Time                         |                        |
| (1)     | (2)       | (3)          | (4)      | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)    | (12)    | (13)         | (14)         | (15)              | (16)                          | (17)                         | (18)                   |
| 4-11-34 | Cult.     | 2,546        | A. E.    | 3:10A        | 55                 | 0.22            | 0.36                        | 0.70                         | 0.26                         | 71      | 42      |              |              | 0.00              |                               |                              | 0.000                  |
|         | Past.     | 3,568        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.000                  |
|         | Woods     | 2,227        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.000                  |
| 4-13-34 |           |              | A. E.    | Rain & Snow  | 0.07               |                 |                             |                              |                              | 41      | 26      |              |              | 0.00              |                               |                              | 0.000                  |
|         | Cult.     | 2,546        | A. E.    | 12:00N       | 120                | 0.20            | 0.24                        | 0.08                         | 0.08                         | 45      | 28      |              |              | 0.00              |                               |                              | 0.000                  |
|         | Past.     | 3,568        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.000                  |
| 5-10-34 | Cult.     | 2,546        | A. E.    | 11:18A       | 72                 | 0.58            | 3.60                        | 1.36                         | 0.94                         | 82      | 56      |              |              | 0.003             |                               |                              | 0.000                  |
|         | Past.     | 3,568        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.000                  |
|         | Woods     | 2,227        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.000                  |
| 5-14-34 | Cult.     | 2,546        | A. E.    | 11:30AM      | 1920               | 0.28            | 0.24                        | 0.16                         | 0.10                         | 82      | 42      |              |              | 0.000             |                               |                              | 0.000                  |
|         | Past.     | 3,568        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.000                  |
|         | Woods     | 2,227        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.000                  |
| 6-6-34  |           |              | A. E.    | 11:40P       | 20                 | 0.04            |                             |                              |                              | 90      | 64      |              |              | 0.00              |                               |                              | 0.000                  |
|         | Cult.     | 2,546        | A. E.    | 5:05A        | 180                | 0.50            | 2.28                        | 0.88                         | 0.76                         | 92      | 47      |              |              | 0.00              |                               |                              | 0.000                  |
|         | Past.     | 3,568        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.000                  |
| 6-18-34 | Cult.     | 2,546        | A. E.    | 10:15AM      | 195                | 1.81            | 1.92                        | 1.68                         | 1.56                         | 94      | 71      | 2:28P        | 7:40P        | 0.32              | 1.30                          | 2:54P                        | 0.666                  |
|         | Past.     | 3,568        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.000                  |
|         | Woods     | 2,227        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.000                  |
| 6-18-34 |           |              | A. E.    | 6:30PM       | 540                | 0.08            |                             |                              |                              | 95      | 62      |              |              | 0.00              |                               |                              | 0.000                  |
|         | Cult.     | 2,546        | A. E.    | 5:25PM       | 160                | 0.33            | 1.56                        | 0.56                         | 0.32                         | 89      | 60      | 6:17P        | 7:30A        | 0.02              | 0.42                          | 6:25P                        | 0.090                  |
|         | Past.     | 3,568        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.000                  |
| 6-22-34 | Cult.     | 2,546        | A. E.    | 3:55P        | 1445               | 0.96            | 2.64                        | 1.92                         | 0.96                         | 90      | 59      | 3:58P        | 11:00A       | 0.43              | 3.16                          | 4:58P                        | 1.170                  |
|         | Past.     | 3,568        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.96                   |
|         | Woods     | 2,227        | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.00              |                               |                              | 0.96                   |

 Wheat 6" high  
 Blue grass--good condition  
 Trees--with young leaves

 Wheat 12" high  
 Blue grass--good condition  
 Trees--full leaf

Wheat 24" high

 Wheat 27" high  
 Blue grass--good  
 Trees--full leaf

Wheat 30" high





PROJECT Zanesville, Ohio

U. S. GOVERNMENT PRINTING OFFICE 8-12308

| DATE         | WATERSHED               |                         | RAINFALL                       |                       |                       |                        |                                |                                 |                                 |         | TEMPERATURE (degrees F.) |                  | RUN-OFF              |                      |                       |                          |                                  | RAINFALL MINUS<br>LOSS (inches)    | BILT LOSS<br>(tons per acre) | CONDITION OF WATERSHED |
|--------------|-------------------------|-------------------------|--------------------------------|-----------------------|-----------------------|------------------------|--------------------------------|---------------------------------|---------------------------------|---------|--------------------------|------------------|----------------------|----------------------|-----------------------|--------------------------|----------------------------------|------------------------------------|------------------------------|------------------------|
|              | Number                  | Area<br>(acres)         | Gage No.                       | Begin<br>(hour)       | Duration<br>(minutes) | Amount<br>(inches)     | MAXIMUM INTENSITY              |                                 |                                 | Minimum | Maximum                  | Begin<br>(hour)  | Ended<br>(hour)      | Amount<br>(inches)   | MAXIMUM RATE          |                          |                                  |                                    |                              |                        |
|              |                         |                         |                                |                       |                       |                        | 5 minutes<br>(inches per hour) | 15 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) |         |                          |                  |                      |                      | Cu. ft. sec.          | Time                     |                                  |                                    |                              |                        |
|              |                         |                         |                                |                       |                       |                        |                                |                                 |                                 |         |                          |                  |                      |                      |                       |                          | (8)                              |                                    |                              |                        |
| (1)          | (2)                     | (3)                     | (4)                            | (5)                   | (6)                   | (7)                    | (8)                            | (9)                             | (10)                            | (11)    | (12)                     | (13)             | (14)                 | (15)                 | (16)                  | (17)                     | (18)                             | (19)                               |                              |                        |
| 6-27-34      |                         |                         | A. E. 3110A                    |                       |                       | 0.14                   |                                |                                 |                                 | 92      | 59                       |                  | 0.00                 |                      |                       |                          | 0.000                            |                                    |                              |                        |
| 6-28-34      |                         |                         | A. E. 7115P                    |                       |                       | 0.05                   |                                |                                 |                                 | 91      | 67                       |                  | 0.00                 |                      |                       |                          | 0.000                            |                                    |                              |                        |
| 7-3-34       |                         |                         | A. E. 51143P                   |                       |                       | 0.08                   |                                |                                 |                                 | 89      | 68                       |                  | 0.00                 |                      |                       |                          | 0.000                            |                                    |                              |                        |
| 7-7-34       | Cult.<br>Past.<br>Woods | 2.546<br>3.568<br>2.227 | A. E. 10100A<br>" " "<br>" " " | 390<br>" " "<br>" " " |                       | 0.14<br>" " "<br>" " " | 0.60<br>" " "<br>" " "         | 0.36<br>" " "<br>" " "          | 0.18<br>" " "<br>" " "          | 91      | 60                       |                  | 0.00<br>0.00<br>0.00 |                      |                       |                          | 0.000<br>0.000<br>0.000          |                                    |                              |                        |
| 7-10-34      | Cult.<br>Past.<br>Woods | 2.546<br>3.568<br>2.227 | A. E. 21140P<br>" " "<br>" " " | 30<br>" " "<br>" " "  |                       | 0.26<br>" " "<br>" " " | 1.08<br>" " "<br>" " "         | 0.80<br>" " "<br>" " "          | 0.52<br>" " "<br>" " "          | 84      | 63                       |                  | 0.09<br>0.00<br>0.00 |                      |                       | 0.17<br>0.26<br>0.26     | 0.332<br>0.000<br>0.000          |                                    |                              |                        |
| 7-11-34      |                         |                         | A. E. 11140P                   |                       |                       | 0.11                   |                                |                                 |                                 | 88      | 63                       |                  | 0.00                 |                      |                       | ok                       | 0.000                            |                                    |                              |                        |
| 7-27-34      |                         |                         | A. E. 6130P                    |                       |                       | 0.06                   |                                |                                 |                                 | 101     | 68                       |                  | 0.00                 |                      |                       |                          | 0.000                            |                                    |                              |                        |
| * 8-2-34     | Cult.<br>Past.<br>Woods |                         | A. E. 6100E<br>" " "<br>" " "  | 270<br>" " "<br>" " " |                       | 2.14<br>" " "<br>" " " | 5.04<br>" " "<br>" " "         | 4.10<br>" " "<br>" " "          | 3.18<br>" " "<br>" " "          | 87      | 60                       | 6:40A<br>8:07A   | 9:00A<br>8:34A       | 0.90<br>0.04<br>0.00 | 5.35<br>0.72          | 6:17A<br>8:18A           | 1.25<br>2.11<br>2.15             | Wheat stubble & new meadow 6" high |                              |                        |
| 8-2-34       | Cult.<br>Past.<br>Woods |                         | A. E. 2108P<br>" " "<br>" " "  | 67<br>" " "<br>" " "  |                       | 0.20<br>" " "<br>" " " | 0.84<br>" " "<br>" " "         | 0.48<br>" " "<br>" " "          | 0.34<br>" " "<br>" " "          |         |                          |                  |                      |                      |                       |                          |                                  |                                    |                              |                        |
| 8-2-34       | Cult.<br>Past.<br>Woods |                         | A. E. 10150P<br>" " "<br>" " " | 50<br>" " "<br>" " "  |                       | 0.26<br>" " "<br>" " " | 0.96<br>" " "<br>" " "         | 0.52<br>" " "<br>" " "          | 0.38<br>" " "<br>" " "          |         |                          |                  |                      |                      |                       |                          | 3.833<br>0.052<br>0.000          |                                    |                              |                        |
| 8-11-34      |                         |                         | A. E. 5158A                    | 180                   |                       | 0.18                   |                                |                                 |                                 | 86      | 66                       | 10:00P<br>11:44P |                      | 0.00                 | 2.903<br>5.10<br>1.00 | 10:10P<br>7:42A<br>7:36A | 0.000<br>3.405<br>0.019<br>0.000 |                                    |                              |                        |
| * 8-15-16-34 | Cult.<br>Past.<br>Woods |                         | A. E. 9130P<br>" " "<br>" " "  | 840<br>" " "<br>" " " |                       | 2.92<br>" " "<br>" " " | 2.52<br>" " "<br>" " "         | 1.12<br>" " "<br>" " "          | 0.96<br>" " "<br>" " "          | 85      | 64                       | 4:15A<br>5:44A   | 9:19A<br>9:19A       | 1.73<br>0.19<br>0.00 | 1.73<br>1.00          | 7:42A<br>7:36A           | 1.19<br>2.73<br>2.92             | Wheat stubble, new meadow 7" high  |                              |                        |

[illegible]



UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH 1934  
 SHEET 5 OF 6 SHEETS

 PROJECT Zanesville, Ohio  
 RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

U. S. GOVERNMENT PRINTING OFFICE, 8-12334

| DATE       | WATERSHED |              | RAINFALL |              |                    |                 | TEMPERATURE (degrees F.)    |                              |                              | RUN-OFF |         |              | RAINFALL MOVES RUN-OFF (inches) | SILT LOSS (tons per acre) | CONDITION OF WATERBED |              |              |                      |
|------------|-----------|--------------|----------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|---------|---------|--------------|---------------------------------|---------------------------|-----------------------|--------------|--------------|----------------------|
|            | Number    | Area (acres) | Gage No. | Began (hour) | Duration (minutes) | Amount (inches) | MAXIMUM INTENSITY           |                              |                              | Maximum | Minimum | Began (hour) |                                 |                           |                       | Ended (hour) | MAXIMUM RATE |                      |
|            |           |              |          |              |                    |                 | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |         |         |              |                                 |                           |                       |              | Cu. ft. sec. | Time                 |
| (1)        | (2)       | (3)          | (4)      | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)    | (12)    | (13)         | (14)                            | (15)                      | (16)                  | (17)         | (18)         | (19)                 |
| 8-22-34    |           |              | A. E.    | 2:45P        |                    | 0.08            |                             |                              |                              | 79      | 49      |              |                                 | 0.00                      |                       |              | 0.000        |                      |
| 8-23-24-34 |           |              | A. E.    | 7:00P        |                    | 0.08            |                             |                              |                              | 82      | 59      |              |                                 | 0.00                      |                       |              | 0.000        |                      |
| 8-27-38-34 |           |              | A. E.    | 10:27P       |                    | 0.04            |                             |                              |                              | 81      | 52      |              |                                 | 0.00                      |                       |              | 0.000        |                      |
| 9-1-34     |           |              | A. E.    |              |                    | 0.02            |                             |                              |                              | 84      | 60      |              |                                 | 0.00                      |                       |              | 0.000        |                      |
| 9-7-34     |           |              | A. E.    | 3:15P        |                    | 0.08            |                             |                              |                              | 79      | 53      |              |                                 | 0.00                      |                       |              | 0.000        |                      |
| 9-11-34    |           |              | A. E.    |              |                    | 0.03            |                             |                              |                              | 82      | 55      |              |                                 | 0.00                      |                       |              | 0.000        |                      |
| 9-14-34    |           |              | A. E.    | 9:10A        |                    | 0.14            |                             |                              |                              | 83      | 62      |              |                                 | 0.00                      |                       |              | 0.000        |                      |
| 9-15-34    |           |              | A. E.    | 2:40P        | 25                 | 0.12            |                             |                              |                              | 83      | 64      |              |                                 | 0.00                      |                       |              | 0.000        |                      |
| * 9-15-34  | Cult.     |              | A. E.    | 9:15P        | 165                | 1.04            | 1.90                        | 1.10                         | 0.68                         |         |         | 10:23P       | 12:35A                          | 0.32                      | 1.75                  | 11:50P       | 0.72         | 0.215                |
|            | Past.     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         | 11:59P       | 12:05A                          | 0.01                      | 0.20                  | 11:45P       | 1.03         | 0.013                |
|            | Woods     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |                                 | 0.00                      |                       |              | 1.05         | 0.000                |
| 9-21-34    | Cult.     |              | A. E.    | 8:24A        | 140                | 0.26            | 1.20                        | 0.40                         | 0.24                         | 80      | 52      |              |                                 | 0.00                      |                       |              | 0.00         |                      |
|            | Past.     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |                                 | 0.00                      |                       |              | 0.00         |                      |
|            | Woods     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |                                 | 0.00                      |                       |              | 0.00         |                      |
| 9-27-34    | Cult.     |              | A. E.    | 6:50A        | 40                 | 0.25            | 1.20                        | 0.68                         | 0.38                         | 86      | 56      |              |                                 | 0.01                      |                       |              | 0.001        |                      |
|            | Past.     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |                                 | 0.00                      |                       |              | 0.00         |                      |
|            | Woods     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |                                 | 0.00                      |                       |              | 0.00         |                      |
| * 9-29-34  | Cult.     |              | A. E.    | 12:25A       | 635                | 1.56            | 1.28                        | 0.90                         | 0.66                         | 72      | 41      | 1:52A        | 11:30A                          | 0.26                      | 0.42                  | 6:40A        | 1.30         | New Meadow--12" high |
|            | Past.     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         | 5:12A        | 8:20A                           | 0.05                      | 0.25                  | 5:54A        | 1.51         | Blue Grass--good     |
|            | Woods     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |                                 | 0.00                      |                       |              | 1.56         | Woods full leaf      |
| * 9-29-34  | Cult.     |              | A. E.    | 12:45P       | 725                | 0.60            | 0.86                        | 0.78                         | 0.58                         |         |         | 10:44P       | 1:18A                           | 0.15                      | 0.42                  | 10:55P       | 0.45         | 0.135                |
|            | Past.     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         | 10:49P       | 2:32A                           | 0.07                      | 0.42                  | 11:00P       | 0.53         | both rains           |
|            | Woods     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |                                 | T                         |                       |              | 0.006        |                      |

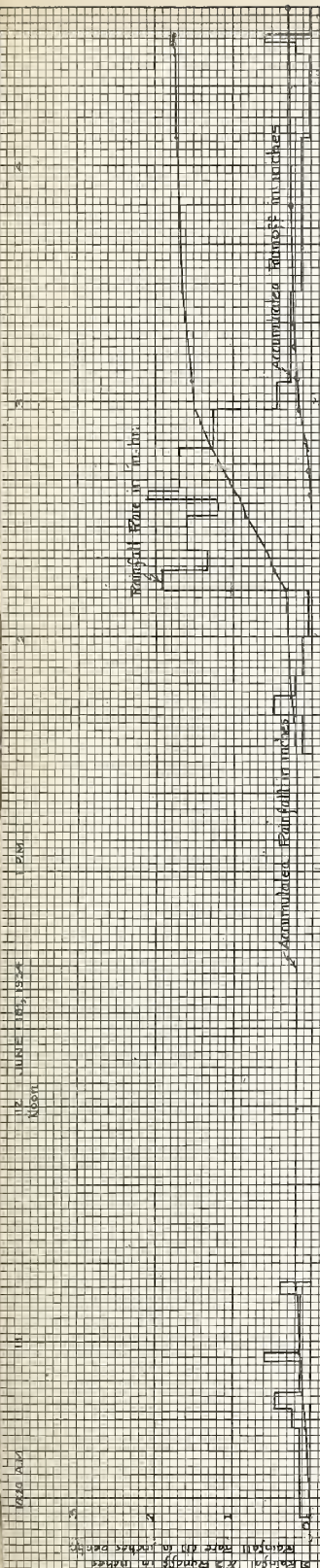




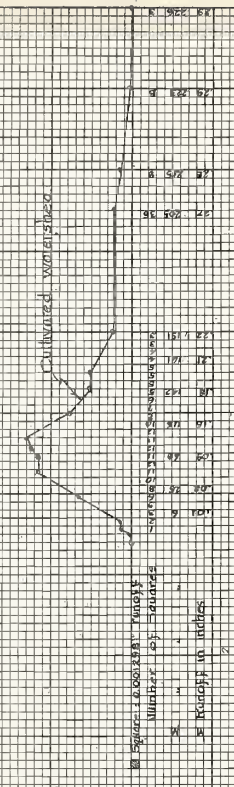








$V = \text{Discharge in second-foot}$



No. of days on which rain falls

ZONE 5VILLE FLOWING

June 18, 1914

510000 2.102



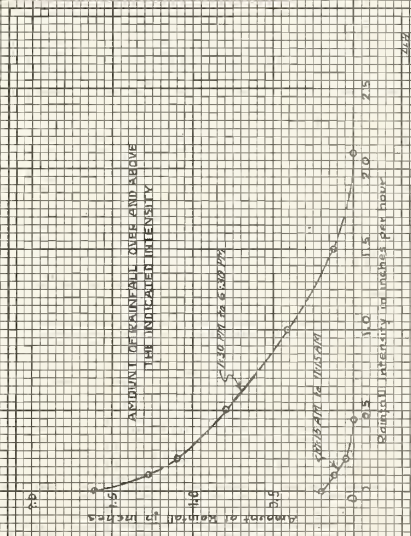


JUNE 18, 1934

Accumulated Rainfall in inches

Accumulated Runoff

Rainfall Rate in inches



Area (acres).....  
 Preceding Rain (in.).....  
 date basin.....  
 duration (hours).....  
 Temperature (air, & soil).....  
 Soil (major type).....  
 percent of area.....  
 Slope, average (percent).....  
 maximum.....  
 Cover, type.....  
 height (ft.).....  
 date last cultivated.....  
 Soil loss (tons per acre).....  
 Remarks.....

Cultivated watershed  
 2,546  
 0.50  
 June 9, 1934  
 3  
 94-71  
 Muckingham Silt Loam  
 All  
 15%  
 18%  
 Wheat - Fall corn  
 1.6  
 0.566

Cultivated watershed

UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 H. H. BENNETT, CHIEF  
 DIVISION OF RESEARCH, W. C. LOWDERMILK, CHIEF  
 N. W. APPALACHIAN EXP. STATION - ZANESVILLE, O.

STORM NO. 1 JUNE 18, 1934

Plot by A. J. B. date 2-25-35 checked by C. S. date 2-25-35  
 Computations by A. J. B. date 2-25-35 checked by C. S. date 2-25-35











परिचय (Intro)

Александр Петрович

→ Brainfull Base 10 indices per m.

|                                |                      |
|--------------------------------|----------------------|
| Area (acres).....              | 2.646                |
| Frosting rain (in.).....       | 0.33                 |
| date begun.....                | June 21, 1934        |
| date ended.....                | 2 hr. 40 min.        |
| duration (hours).....          | 90-89                |
| temperature (max. & min.)..... | Washington Silt Loam |
| Soil (major type).....         | All                  |
| percent of area.....           | 14                   |
| Slope, average (percent).....  | 18%                  |
| maximum.....                   | upward               |
| Cover, type.....               | 2                    |
| height (ft.).....              | —                    |
| date lost: cultivated.....     | —                    |
| Soil loss (tons per acre)..... | 1.170                |
| Remarks.....                   | —                    |

| Run | Time    | Alt | Wind | Temp | Wind  | Temp |
|-----|---------|-----|------|------|-------|------|
| 1   | 3:25.9  | 5   | 0.00 | 0.24 | 2.54  |      |
| 2   | 4:00.0  | 5   | 0.24 | 0.24 | 2.76  |      |
| 3   | 4:08.0  | 5   | 0.24 | 0.24 | 3.00  |      |
| 4   | 4:05.0  | 4   | 0.50 | 0.24 | 3.24  |      |
| 5   | 4:50.0  | 4   | 0.50 | 0.24 | 3.50  |      |
| 6   | 4:58.0  | 5   | 0.74 | 0.24 | 3.74  |      |
| 7   | 5:01.0  | 5   | 0.74 | 0.24 | 4.00  |      |
| 8   | 5:05.0  | 5   | 0.74 | 0.24 | 4.24  |      |
| 9   | 5:15.0  | 5   | 0.74 | 0.24 | 4.50  |      |
| 10  | 5:22.0  | 5   | 0.74 | 0.24 | 4.74  |      |
| 11  | 5:35.0  | 5   | 0.74 | 0.24 | 5.00  |      |
| 12  | 5:40.0  | 5   | 0.74 | 0.24 | 5.24  |      |
| 13  | 5:45.0  | 5   | 0.74 | 0.24 | 5.50  |      |
| 14  | 5:50.0  | 5   | 0.74 | 0.24 | 5.74  |      |
| 15  | 5:55.0  | 5   | 0.74 | 0.24 | 6.00  |      |
| 16  | 6:00.0  | 5   | 0.74 | 0.24 | 6.24  |      |
| 17  | 6:05.0  | 5   | 0.74 | 0.24 | 6.50  |      |
| 18  | 6:10.0  | 5   | 0.74 | 0.24 | 6.74  |      |
| 19  | 6:15.0  | 5   | 0.74 | 0.24 | 7.00  |      |
| 20  | 6:20.0  | 5   | 0.74 | 0.24 | 7.24  |      |
| 21  | 6:25.0  | 5   | 0.74 | 0.24 | 7.50  |      |
| 22  | 6:30.0  | 5   | 0.74 | 0.24 | 7.74  |      |
| 23  | 6:35.0  | 5   | 0.74 | 0.24 | 8.00  |      |
| 24  | 6:40.0  | 5   | 0.74 | 0.24 | 8.24  |      |
| 25  | 6:45.0  | 5   | 0.74 | 0.24 | 8.50  |      |
| 26  | 6:50.0  | 5   | 0.74 | 0.24 | 8.74  |      |
| 27  | 6:55.0  | 5   | 0.74 | 0.24 | 9.00  |      |
| 28  | 7:00.0  | 5   | 0.74 | 0.24 | 9.24  |      |
| 29  | 7:05.0  | 5   | 0.74 | 0.24 | 9.50  |      |
| 30  | 7:10.0  | 5   | 0.74 | 0.24 | 9.74  |      |
| 31  | 7:15.0  | 5   | 0.74 | 0.24 | 10.00 |      |
| 32  | 7:20.0  | 5   | 0.74 | 0.24 | 10.24 |      |
| 33  | 7:25.0  | 5   | 0.74 | 0.24 | 10.50 |      |
| 34  | 7:30.0  | 5   | 0.74 | 0.24 | 10.74 |      |
| 35  | 7:35.0  | 5   | 0.74 | 0.24 | 11.00 |      |
| 36  | 7:40.0  | 5   | 0.74 | 0.24 | 11.24 |      |
| 37  | 7:45.0  | 5   | 0.74 | 0.24 | 11.50 |      |
| 38  | 7:50.0  | 5   | 0.74 | 0.24 | 11.74 |      |
| 39  | 7:55.0  | 5   | 0.74 | 0.24 | 12.00 |      |
| 40  | 8:00.0  | 5   | 0.74 | 0.24 | 12.24 |      |
| 41  | 8:05.0  | 5   | 0.74 | 0.24 | 12.50 |      |
| 42  | 8:10.0  | 5   | 0.74 | 0.24 | 12.74 |      |
| 43  | 8:15.0  | 5   | 0.74 | 0.24 | 13.00 |      |
| 44  | 8:20.0  | 5   | 0.74 | 0.24 | 13.24 |      |
| 45  | 8:25.0  | 5   | 0.74 | 0.24 | 13.50 |      |
| 46  | 8:30.0  | 5   | 0.74 | 0.24 | 13.74 |      |
| 47  | 8:35.0  | 5   | 0.74 | 0.24 | 14.00 |      |
| 48  | 8:40.0  | 5   | 0.74 | 0.24 | 14.24 |      |
| 49  | 8:45.0  | 5   | 0.74 | 0.24 | 14.50 |      |
| 50  | 8:50.0  | 5   | 0.74 | 0.24 | 14.74 |      |
| 51  | 8:55.0  | 5   | 0.74 | 0.24 | 15.00 |      |
| 52  | 9:00.0  | 5   | 0.74 | 0.24 | 15.24 |      |
| 53  | 9:05.0  | 5   | 0.74 | 0.24 | 15.50 |      |
| 54  | 9:10.0  | 5   | 0.74 | 0.24 | 15.74 |      |
| 55  | 9:15.0  | 5   | 0.74 | 0.24 | 16.00 |      |
| 56  | 9:20.0  | 5   | 0.74 | 0.24 | 16.24 |      |
| 57  | 9:25.0  | 5   | 0.74 | 0.24 | 16.50 |      |
| 58  | 9:30.0  | 5   | 0.74 | 0.24 | 16.74 |      |
| 59  | 9:35.0  | 5   | 0.74 | 0.24 | 17.00 |      |
| 60  | 9:40.0  | 5   | 0.74 | 0.24 | 17.24 |      |
| 61  | 9:45.0  | 5   | 0.74 | 0.24 | 17.50 |      |
| 62  | 9:50.0  | 5   | 0.74 | 0.24 | 17.74 |      |
| 63  | 9:55.0  | 5   | 0.74 | 0.24 | 18.00 |      |
| 64  | 10:00.0 | 5   | 0.74 | 0.24 | 18.24 |      |
| 65  | 10:05.0 | 5   | 0.74 | 0.24 | 18.50 |      |
| 66  | 10:10.0 | 5   | 0.74 | 0.24 | 18.74 |      |
| 67  | 10:15.0 | 5   | 0.74 | 0.24 | 19.00 |      |
| 68  | 10:20.0 | 5   | 0.74 | 0.24 | 19.24 |      |
| 69  | 10:25.0 | 5   | 0.74 | 0.24 | 19.50 |      |
| 70  | 10:30.0 | 5   | 0.74 | 0.24 | 19.74 |      |
| 71  | 10:35.0 | 5   | 0.74 | 0.24 | 20.00 |      |
| 72  | 10:40.0 | 5   | 0.74 | 0.24 | 20.24 |      |
| 73  | 10:45.0 | 5   | 0.74 | 0.24 | 20.50 |      |
| 74  | 10:50.0 | 5   | 0.74 | 0.24 | 20.74 |      |
| 75  | 10:55.0 | 5   | 0.74 | 0.24 | 21.00 |      |
| 76  | 11:00.0 | 5   | 0.74 | 0.24 | 21.24 |      |
| 77  | 11:05.0 | 5   | 0.74 | 0.24 | 21.50 |      |
| 78  | 11:10.0 | 5   | 0.74 | 0.24 | 21.74 |      |
| 79  | 11:15.0 | 5   | 0.74 | 0.24 | 22.00 |      |
| 80  | 11:20.0 | 5   | 0.74 | 0.24 | 22.24 |      |
| 81  | 11:25.0 | 5   | 0.74 | 0.24 | 22.50 |      |
| 82  | 11:30.0 | 5   | 0.74 | 0.24 | 22.74 |      |
| 83  | 11:35.0 | 5   | 0.74 | 0.24 | 23.00 |      |
| 84  | 11:40.0 | 5   | 0.74 | 0.24 | 23.24 |      |
| 85  | 11:45.0 | 5   | 0.74 | 0.24 | 23.50 |      |
| 86  | 11:50.0 | 5   | 0.74 | 0.24 | 23.74 |      |
| 87  | 11:55.0 | 5   | 0.74 | 0.24 | 24.00 |      |
| 88  | 12:00.0 | 5   | 0.74 | 0.24 | 24.24 |      |
| 89  | 12:05.0 | 5   | 0.74 | 0.24 | 24.50 |      |
| 90  | 12:10.0 | 5   | 0.74 | 0.24 | 24.74 |      |
| 91  | 12:15.0 | 5   | 0.74 | 0.24 | 25.00 |      |
| 92  | 12:20.0 | 5   | 0.74 | 0.24 | 25.24 |      |
| 93  | 12:25.0 | 5   | 0.74 | 0.24 | 25.50 |      |
| 94  | 12:30.0 | 5   | 0.74 | 0.24 | 25.74 |      |
| 95  | 12:35.0 | 5   | 0.74 | 0.24 | 26.00 |      |
| 96  | 12:40.0 | 5   | 0.74 | 0.24 | 26.24 |      |
| 97  | 12:45.0 | 5   | 0.74 | 0.24 | 26.50 |      |
| 98  | 12:50.0 | 5   | 0.74 | 0.24 | 26.74 |      |
| 99  | 12:55.0 | 5   | 0.74 | 0.24 | 27.00 |      |
| 100 | 13:00.0 | 5   | 0.74 | 0.24 | 27.24 |      |

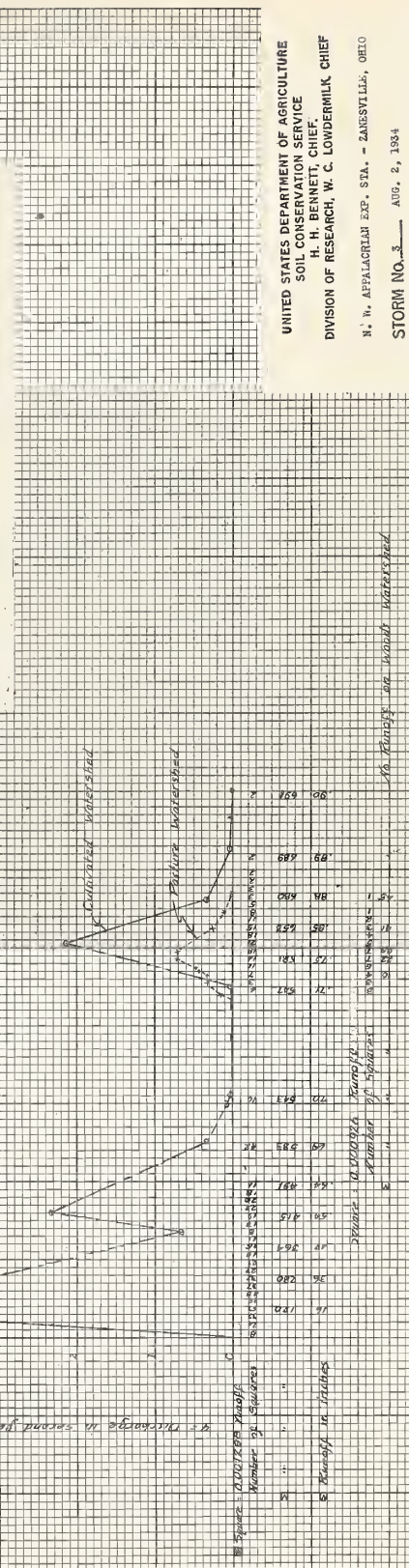
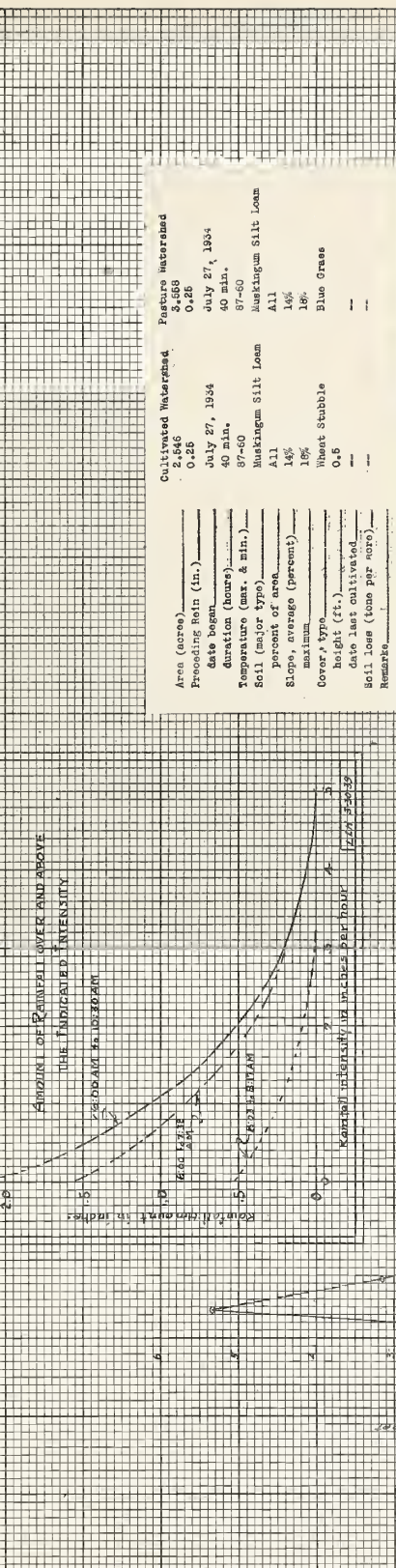
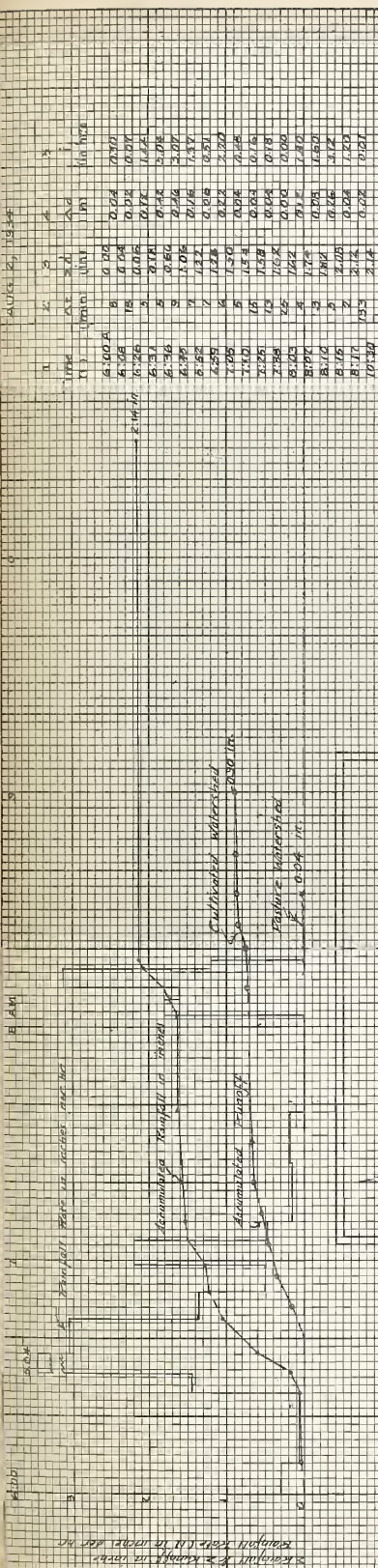
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
H. H. BENNETT, CHIEF  
DIVISION OF RESEARCH, W. C. LOWDERMILK, CHIEF  
N. W. APPALACHIAN EXP. STA. - ZANESVILLE, OHIO

STORM NO. 2 \_\_\_\_\_ JUNE 22, 1934

Plot by Full\_K date 2-20-39 checked by C.F.K. date 2-20-39  
 Computations by Al.H. date 2-20-39 checked by A.G.M. date 2-20-39







UNITED STATES DEPARTMENT OF AGRICULTURE  
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N. W. APPALACRIAN EXP. STA. - ZANESVILLE, OHIO

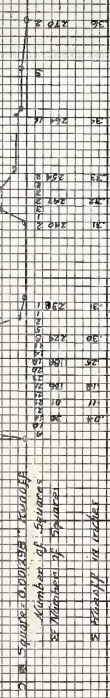
STORM NO. 3 AUG. 2, 1934

Plot by A.I.H. date 2-12-39, checked by C.F.K. date 2-21-39  
 computations by F.D.K. date 2-21-39, checked by A.C.M. date 2-21-39





Accumulated Funds



Aug. 15-16, 1934  
West of 2





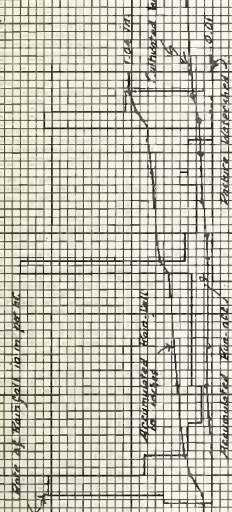






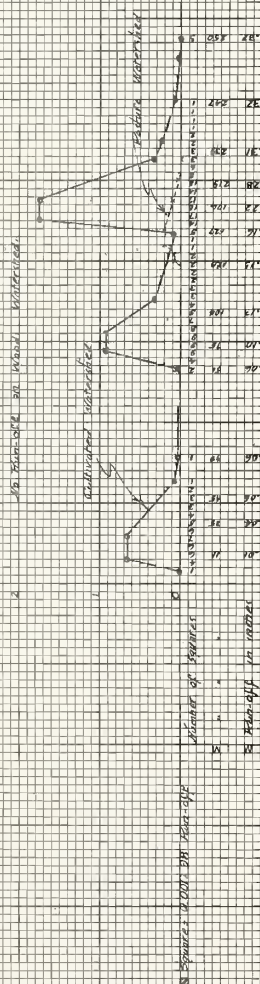
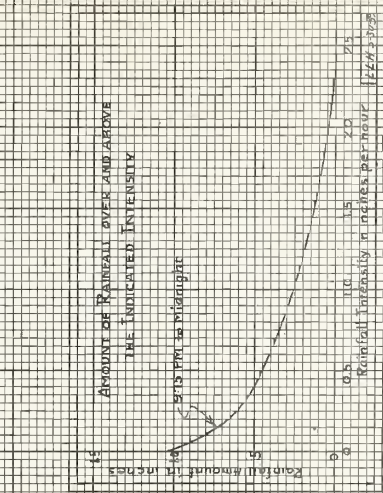
Sept. 15, 1934

Rate of Rainfall in in. per hr.



| Time (min.) | Rate of Rainfall (in. per hr.) | Time (min.) | Rate of Rainfall (in. per hr.) |
|-------------|--------------------------------|-------------|--------------------------------|
| 0-5         | 0.00                           | 10-15       | 0.00                           |
| 5-10        | 0.00                           | 15-20       | 0.00                           |
| 10-15       | 0.00                           | 20-25       | 0.00                           |
| 15-20       | 0.00                           | 25-30       | 0.00                           |
| 20-25       | 0.00                           | 30-35       | 0.00                           |
| 25-30       | 0.00                           | 35-40       | 0.00                           |
| 30-35       | 0.00                           | 40-45       | 0.00                           |
| 35-40       | 0.00                           | 45-50       | 0.00                           |
| 40-45       | 0.00                           | 50-55       | 0.00                           |
| 45-50       | 0.00                           | 55-60       | 0.00                           |
| 50-55       | 0.00                           | 60-65       | 0.00                           |
| 55-60       | 0.00                           | 65-70       | 0.00                           |
| 60-65       | 0.00                           | 70-75       | 0.00                           |
| 65-70       | 0.00                           | 75-80       | 0.00                           |
| 70-75       | 0.00                           | 80-85       | 0.00                           |
| 75-80       | 0.00                           | 85-90       | 0.00                           |
| 80-85       | 0.00                           | 90-95       | 0.00                           |
| 85-90       | 0.00                           | 95-100      | 0.00                           |
| 90-95       | 0.00                           | 100-105     | 0.00                           |
| 95-100      | 0.00                           | 105-110     | 0.00                           |
| 100-105     | 0.00                           | 110-115     | 0.00                           |
| 105-110     | 0.00                           | 115-120     | 0.00                           |
| 110-115     | 0.00                           | 115-120     | 0.00                           |
| 115-120     | 0.00                           | 120-125     | 0.00                           |
| 120-125     | 0.00                           | 125-130     | 0.00                           |
| 125-130     | 0.00                           | 130-135     | 0.00                           |
| 130-135     | 0.00                           | 135-140     | 0.00                           |
| 135-140     | 0.00                           | 140-145     | 0.00                           |
| 140-145     | 0.00                           | 145-150     | 0.00                           |
| 145-150     | 0.00                           | 150-155     | 0.00                           |
| 150-155     | 0.00                           | 155-160     | 0.00                           |
| 155-160     | 0.00                           | 160-165     | 0.00                           |
| 160-165     | 0.00                           | 165-170     | 0.00                           |
| 165-170     | 0.00                           | 170-175     | 0.00                           |
| 170-175     | 0.00                           | 175-180     | 0.00                           |
| 175-180     | 0.00                           | 180-185     | 0.00                           |
| 180-185     | 0.00                           | 185-190     | 0.00                           |
| 185-190     | 0.00                           | 190-195     | 0.00                           |
| 190-195     | 0.00                           | 195-200     | 0.00                           |
| 195-200     | 0.00                           | 200-205     | 0.00                           |
| 200-205     | 0.00                           | 205-210     | 0.00                           |
| 205-210     | 0.00                           | 210-215     | 0.00                           |
| 210-215     | 0.00                           | 215-220     | 0.00                           |
| 215-220     | 0.00                           | 220-225     | 0.00                           |
| 220-225     | 0.00                           | 225-230     | 0.00                           |
| 225-230     | 0.00                           | 230-235     | 0.00                           |
| 230-235     | 0.00                           | 235-240     | 0.00                           |
| 235-240     | 0.00                           | 240-245     | 0.00                           |
| 240-245     | 0.00                           | 245-250     | 0.00                           |
| 245-250     | 0.00                           | 250-255     | 0.00                           |
| 250-255     | 0.00                           | 255-260     | 0.00                           |
| 255-260     | 0.00                           | 260-265     | 0.00                           |
| 260-265     | 0.00                           | 265-270     | 0.00                           |
| 265-270     | 0.00                           | 270-275     | 0.00                           |
| 270-275     | 0.00                           | 275-280     | 0.00                           |
| 275-280     | 0.00                           | 280-285     | 0.00                           |
| 280-285     | 0.00                           | 285-290     | 0.00                           |
| 285-290     | 0.00                           | 290-295     | 0.00                           |
| 290-295     | 0.00                           | 295-300     | 0.00                           |
| 295-300     | 0.00                           | 300-305     | 0.00                           |
| 300-305     | 0.00                           | 305-310     | 0.00                           |
| 305-310     | 0.00                           | 310-315     | 0.00                           |
| 310-315     | 0.00                           | 315-320     | 0.00                           |
| 315-320     | 0.00                           | 320-325     | 0.00                           |
| 320-325     | 0.00                           | 325-330     | 0.00                           |
| 325-330     | 0.00                           | 330-335     | 0.00                           |
| 330-335     | 0.00                           | 335-340     | 0.00                           |
| 335-340     | 0.00                           | 340-345     | 0.00                           |
| 340-345     | 0.00                           | 345-350     | 0.00                           |
| 345-350     | 0.00                           | 350-355     | 0.00                           |
| 350-355     | 0.00                           | 355-360     | 0.00                           |
| 355-360     | 0.00                           | 360-365     | 0.00                           |
| 360-365     | 0.00                           | 365-370     | 0.00                           |
| 365-370     | 0.00                           | 370-375     | 0.00                           |
| 370-375     | 0.00                           | 375-380     | 0.00                           |
| 375-380     | 0.00                           | 380-385     | 0.00                           |
| 380-385     | 0.00                           | 385-390     | 0.00                           |
| 385-390     | 0.00                           | 390-395     | 0.00                           |
| 390-395     | 0.00                           | 395-400     | 0.00                           |
| 395-400     | 0.00                           | 400-405     | 0.00                           |
| 400-405     | 0.00                           | 405-410     | 0.00                           |
| 405-410     | 0.00                           | 410-415     | 0.00                           |
| 410-415     | 0.00                           | 415-420     | 0.00                           |
| 415-420     | 0.00                           | 420-425     | 0.00                           |
| 420-425     | 0.00                           | 425-430     | 0.00                           |
| 425-430     | 0.00                           | 430-435     | 0.00                           |
| 430-435     | 0.00                           | 435-440     | 0.00                           |
| 435-440     | 0.00                           | 440-445     | 0.00                           |
| 440-445     | 0.00                           | 445-450     | 0.00                           |
| 445-450     | 0.00                           | 450-455     | 0.00                           |
| 450-455     | 0.00                           | 455-460     | 0.00                           |
| 455-460     | 0.00                           | 460-465     | 0.00                           |
| 460-465     | 0.00                           | 465-470     | 0.00                           |
| 465-470     | 0.00                           | 470-475     | 0.00                           |
| 470-475     | 0.00                           | 475-480     | 0.00                           |
| 475-480     | 0.00                           | 480-485     | 0.00                           |
| 480-485     | 0.00                           | 485-490     | 0.00                           |
| 485-490     | 0.00                           | 490-495     | 0.00                           |
| 490-495     | 0.00                           | 495-500     | 0.00                           |
| 495-500     | 0.00                           | 500-505     | 0.00                           |
| 500-505     | 0.00                           | 505-510     | 0.00                           |
| 505-510     | 0.00                           | 510-515     | 0.00                           |
| 510-515     | 0.00                           | 515-520     | 0.00                           |
| 515-520     | 0.00                           | 520-525     | 0.00                           |
| 520-525     | 0.00                           | 525-530     | 0.00                           |
| 525-530     | 0.00                           | 530-535     | 0.00                           |
| 530-535     | 0.00                           | 535-540     | 0.00                           |
| 535-540     | 0.00                           | 540-545     | 0.00                           |
| 540-545     | 0.00                           | 545-550     | 0.00                           |
| 545-550     | 0.00                           | 550-555     | 0.00                           |
| 550-555     | 0.00                           | 555-560     | 0.00                           |
| 555-560     | 0.00                           | 560-565     | 0.00                           |
| 560-565     | 0.00                           | 565-570     | 0.00                           |
| 565-570     | 0.00                           | 570-575     | 0.00                           |
| 570-575     | 0.00                           | 575-580     | 0.00                           |
| 575-580     | 0.00                           | 580-585     | 0.00                           |
| 580-585     | 0.00                           | 585-590     | 0.00                           |
| 585-590     | 0.00                           | 590-595     | 0.00                           |
| 590-595     | 0.00                           | 595-600     | 0.00                           |
| 595-600     | 0.00                           | 600-605     | 0.00                           |
| 600-605     | 0.00                           | 605-610     | 0.00                           |
| 605-610     | 0.00                           | 610-615     | 0.00                           |
| 610-615     | 0.00                           | 615-620     | 0.00                           |
| 615-620     | 0.00                           | 620-625     | 0.00                           |
| 620-625     | 0.00                           | 625-630     | 0.00                           |
| 625-630     | 0.00                           | 630-635     | 0.00                           |
| 630-635     | 0.00                           | 635-640     | 0.00                           |
| 635-640     | 0.00                           | 640-645     | 0.00                           |
| 640-645     | 0.00                           | 645-650     | 0.00                           |
| 645-650     | 0.00                           | 650-655     | 0.00                           |
| 650-655     | 0.00                           | 655-660     | 0.00                           |
| 655-660     | 0.00                           | 660-665     | 0.00                           |
| 660-665     | 0.00                           | 665-670     | 0.00                           |
| 665-670     | 0.00                           | 670-675     | 0.00                           |
| 670-675     | 0.00                           | 675-680     | 0.00                           |
| 675-680     | 0.00                           | 680-685     | 0.00                           |
| 680-685     | 0.00                           | 685-690     | 0.00                           |
| 685-690     | 0.00                           | 690-695     | 0.00                           |
| 690-695     | 0.00                           | 695-700     | 0.00                           |
| 695-700     | 0.00                           | 700-705     | 0.00                           |
| 700-705     | 0.00                           | 705-710     | 0.00                           |
| 705-710     | 0.00                           | 710-715     | 0.00                           |
| 710-715     | 0.00                           | 715-720     | 0.00                           |
| 715-720     | 0.00                           | 720-725     | 0.00                           |
| 720-725     | 0.00                           | 725-730     | 0.00                           |
| 725-730     | 0.00                           | 730-735     | 0.00                           |
| 730-735     | 0.00                           | 735-740     | 0.00                           |
| 735-740     | 0.00                           | 740-745     | 0.00                           |
| 740-745     | 0.00                           | 745-750     | 0.00                           |
| 745-750     | 0.00                           | 750-755     | 0.00                           |
| 750-755     | 0.00                           | 755-760     | 0.00                           |
| 755-760     | 0.00                           | 760-765     | 0.00                           |
| 760-765     | 0.00                           | 765-770     | 0.00                           |
| 765-770     | 0.00                           | 770-775     | 0.00                           |
| 770-775     | 0.00                           | 775-780     | 0.00                           |
| 775-780     | 0.00                           | 780-785     | 0.00                           |
| 780-785     | 0.00                           | 785-790     | 0.00                           |
| 785-790     | 0.00                           | 790-795     | 0.00                           |
| 790-795     | 0.00                           | 795-800     | 0.00                           |
| 795-800     | 0.00                           | 800-805     | 0.00                           |
| 800-805     | 0.00                           | 805-810     | 0.00                           |
| 805-810     | 0.00                           | 810-815     | 0.00                           |
| 810-815     | 0.00                           | 815-820     | 0.00                           |
| 815-820     | 0.00                           | 820-825     | 0.00                           |
| 820-825     | 0.00                           | 825-830     | 0.00                           |
| 825-830     | 0.00                           | 830-835     | 0.00                           |
| 830-835     | 0.00                           | 835-840     | 0.00                           |
| 835-840     | 0.00                           | 840-845     | 0.00                           |
| 840-845     | 0.00                           | 845-850     | 0.00                           |
| 845-850     | 0.00                           | 850-855     | 0.00                           |
| 850-855     | 0.00                           | 855-860     | 0.00                           |
| 855-860     | 0.00                           | 860-865     | 0.00                           |
| 860-865     | 0.00                           | 865-870     | 0.00                           |
| 865-870     | 0.00                           | 870-875     | 0.00                           |
| 870-875     | 0.00                           | 875-880     | 0.00                           |
| 875-880     | 0.00                           | 880-885     | 0.00                           |
| 880-885     | 0.00                           | 885-890     | 0.00                           |
| 885-890     | 0.00                           | 890-895     | 0.00                           |
| 890-895     | 0.00                           | 895-900     | 0.00                           |
| 895-900     | 0.00                           | 900-905     | 0.00                           |
| 900-905     | 0.00                           | 905-910     | 0.00                           |
| 905-910     | 0.00                           | 910-915     | 0.00                           |
| 910-915     | 0.00                           | 915-920     | 0.00                           |
| 915-920     | 0.00                           | 920-925     | 0.00                           |
| 920-925     | 0.00                           | 925-930     | 0.00                           |
| 925-930     | 0.00                           | 930-935     | 0.00                           |
| 930-935     | 0.00                           | 935-940     | 0.00                           |
| 935-940     | 0.00                           | 940-945     | 0.00                           |
| 940-945     | 0.00                           | 945-950     | 0.00                           |
| 945-950     | 0.00                           | 950-955     | 0.00                           |
| 950-955     | 0.00                           | 955-960     | 0.00                           |
| 955-960     | 0.00                           | 960-965     | 0.00                           |
| 960-965     | 0.00                           | 965-970     | 0.00                           |
| 965-970     | 0.00                           | 970-975     | 0.00                           |
| 970-975     | 0.00                           | 975-980     | 0.00                           |
| 975-980     | 0.00                           | 980-985     | 0.00                           |
| 980-985     | 0.00                           | 985-990     | 0.00                           |
| 985-990     | 0.00                           | 990-995     | 0.00                           |
| 990-995     | 0.00                           | 995-1000    | 0.00                           |

Area (acres) 2.566  
 Preceding Rain (in.) 0.12  
 date begun Sept. 15, 1934  
 duration (hours) 25 min.  
 Temperature (max. & min.) 85-64  
 Soil (major type) Rustling Silt Loam  
 percent of area All  
 Slope, average (percent) 16%  
 maximum 16%  
 Cover, type Wheat Stubble - New Meadow  
 height (ft.) 0.6  
 date last cultivated 0.7  
 Soil loss (tons per acre) 0.215  
 Remarks



UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 H. H. BENNETT, CHIEF  
 DIVISION OF RESEARCH, W. C. LOWDERMILK, CHIEF  
 N. W. APPLACIAN, EXP. STA. - ZANESVILLE, OHIO

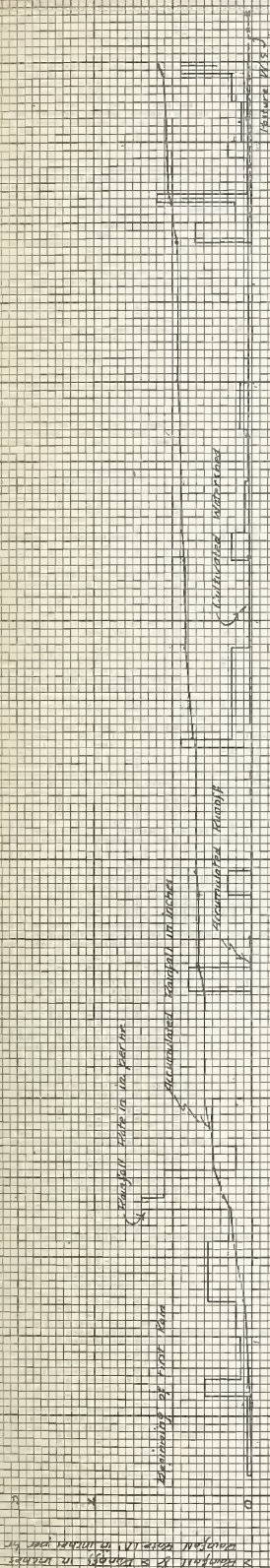
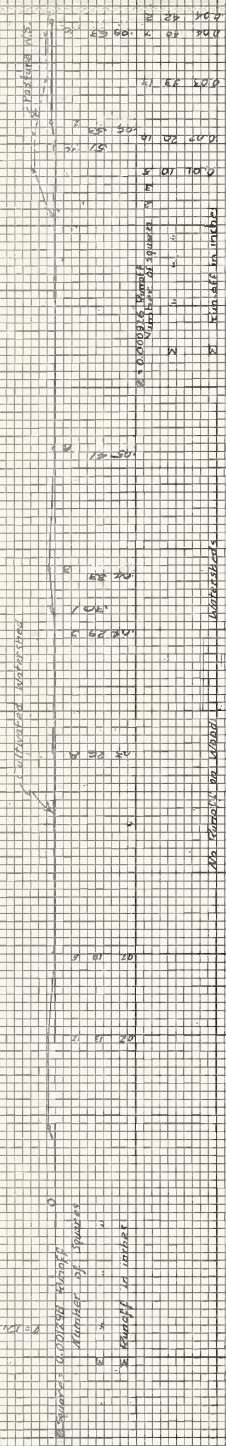
STORM NO. 6 SEPT. 15, 1934

Plot by E. D. M. date 2-27-38 checked by A. L. M. date 2-27-39  
 Computations by A. L. M. date 2-27-38 checked by C. L. M. date 2-27-39





SEPT. 29-30, 1934  
-5-1000-1-6A







SEPT. 27, 1939

rainfall rate in in. per hr.

Accumulated Rainfall in inches

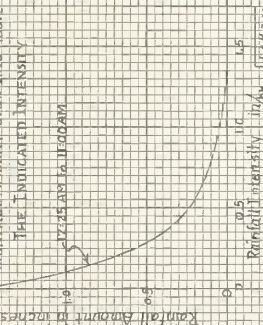
Rate of Rainfall in in. per hr.

Accumulated Rainfall in inches

0.02 in.

RAINFALL AMOUNT OVER AND ABOVE  
THE INDICATED INTENSITY

Rainfall Amount in inches



Cultivation discontinued 2,546  
Area (acres) 0.25  
Preceding Rain (in.) Sept. 27, 1939  
data base 40 in.  
duration (hours) 72-41  
Temperature (max. & min.) 72-41  
Soil (major type) Muskingum Silt Loam  
Percent of area All  
Slope, average (percent) 18%  
Cover, type Wheat stubble - New Meadow  
height (ft.) 0.5  
date last cultivated 0.8  
Soil loss (ton per acre) 0.8  
Remarks

exchange in second feet

5000-10 001258 Rainfall  
Number of hours  
Rainfall in inches

0.02 in.

Cultivated watershed

No runoff in watershed

Watershed

SEPT. 27, 1939

Rate of Rainfall in in. per hr.

Accumulated Rainfall in inches

0.02 in.

Cultivation discontinued 2,546  
Area (acres) 0.25  
Preceding Rain (in.) Sept. 27, 1939  
data base 40 in.  
duration (hours) 72-41  
Temperature (max. & min.) 72-41  
Soil (major type) Muskingum Silt Loam  
Percent of area All  
Slope, average (percent) 18%  
Cover, type Wheat stubble - New Meadow  
height (ft.) 0.5  
date last cultivated 0.8  
Soil loss (ton per acre) 0.8  
Remarks

exchange in second feet

5000-10 001258 Rainfall  
Number of hours  
Rainfall in inches

0.02 in.

Cultivated watershed

No runoff in watershed

Watershed

COLUMBIANA, OHIO

SEP. 29-30, 1939

Sheet 2 of 3

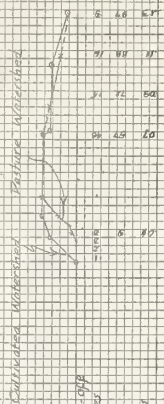
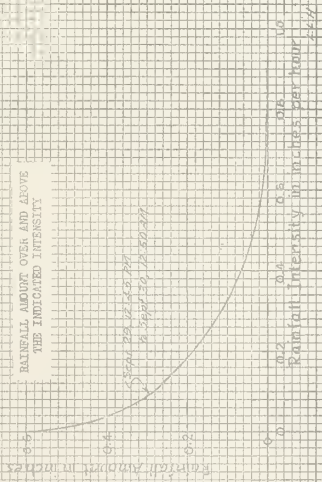




SEPTEMBER 29, 1936

Rate of Rain-fall in inches

RAINFALL AMOUNT OVER AND ABOVE THE INDICATED INTENSITY



Number of Squares

in inches in second peak

Rate of Rain-fall in inches















UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH 1935, 19 35  
 SHEET 1 OF 6 SHEETS

 PROJECT Zanesville, Ohio  
 RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

| DATE     | WATERSHED |              | RAINFALL |                   |                    |                 |                             | TEMPERATURE (degrees F.)     |                              | RUN-OFF      |              |                 |              |           | RAINFALL MEASURED (inches) | Soil Loss (tons per acre) | CONDITION OF WATERSHED   |
|----------|-----------|--------------|----------|-------------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|--------------|--------------|-----------------|--------------|-----------|----------------------------|---------------------------|--|
|          | Number    | Area (acres) | Gage No. | Begin (hour)      | Duration (minutes) | Amount (inches) | MAXIMUM INTENSITY           |                              |                              | Began (hour) | Ended (hour) | Amount (inches) | MAXIMUM RATE |           |                            |                           |  |
|          |           |              |          |                   |                    |                 | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |              |              |                 | Cu. ft. sec. | Time      |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
| (1)      | (2)       | (3)          | (4)      | (5)               | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)         | (12)         | (13)            | (14)         | (15)      | (16)                       | (17)                      | (18)   |
| Jan. 7   |           |              | A. E.    | Mist              |                    | 0.03            |                             |                              |                              | 56           | 42           |                 |              | No Runoff |                            |                           | New meadow--clover & timothy sown in wheat Apr., 1934.   |
| 8        |           |              | "        | 8:00A             | 120                | 0.12            |                             |                              |                              | 52           | 40           |                 |              | "         |                            |                           | Reached a probable height of 8-10 inches that fall and was doubtless somewhat matted down during the winter. Stand was fair. |
| 9        |           |              | "        | "                 | "                  | 0.04            |                             |                              |                              | 61           | 46           |                 |              | "         |                            |                           |  |
| 16       |           |              | "        | 5:00P             | 180                | 0.68            | 0.84                        | 0.48                         | 0.38                         | 37           | 21           |                 |              | No Runoff |                            |                           |  |
| 19       |           |              | "        | Snow & Rain       | 0.12               |                 |                             |                              |                              | 30           | 22           |                 |              | "         |                            |                           |  |
| 20       |           |              | "        | "                 | "                  | 0.06            |                             |                              |                              | 40           | 28           |                 |              | "         |                            |                           |  |
| 20-21    | Cult.     |              | "        | 11:30P            | 735                | 0.42            | 0.60                        | 0.32                         | 0.20                         | 55           | 28           | 12:59P          | 0.03         | 0.07      | 4:13A                      | 0.39                      | 0.010  |
| 21       | Past.     |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              | No Runoff |                            |                           |  |
| 21       | Woods     |              | A. E.    | Std. Snow & Sleet | 0.10               |                 |                             |                              |                              | 55           | 39           |                 |              | No Runoff |                            |                           | 0.000  |
| 26       |           |              | "        | "                 | "                  | 0.04            |                             |                              |                              | 23           | 10           |                 |              | "         |                            |                           | 0.000  |
| Feb. 5   |           |              | "        | "                 |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
| 8        | Cult.     |              | "        | "                 |                    | 0.10            |                             |                              |                              | 28           | 22           |                 |              | No Runoff |                            |                           | 0.000  |
| 8        | Past.     |              | "        | "                 |                    | 0.05            |                             |                              |                              | 35           | 10           | Chart not used  |              | 0.01      |                            | 0.04                      | T  |
| 14-15    | Cult.     |              | "        | 8:00A             | 1200               | 0.42            | 0.24                        | 0.16                         | 0.08                         | 51           | 27           | Chart not used  |              | 0.02      |                            | 0.40                      | T  |
| 14-15    | Past.     |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              | No Runoff |                            |                           |  |
| 14-15    | Woods     |              | A. E.    | Std. Cult.        | 1100               | 0.63            | 0.24                        | 0.24                         | 0.24                         | 34           | 18           | Chart not used  |              | 0.01      |                            | 1.13                      | T  |
| 22-23    | Cult.     | Sleet        |          |                   |                    |                 |                             |                              |                              |              |              |                 |              | No Runoff |                            |                           |  |
| 22-23    | Past.     |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              | No Runoff |                            |                           |  |
| 22-23    | Woods     |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              | No Runoff |                            |                           |  |
| 25       | Cult.     | 2,546        | A. E.    | Noon              | 570                | 0.11            | 0.08                        | 0.08                         | 0.08                         | 48           | 24           | Chart not used  |              | 0.09      |                            | 0.02                      | 0.020  |
| 25       | Past.     | 3,568        | "        | "                 |                    | 0.11            | 0.08                        | 0.08                         | 0.08                         |              |              | Chart not used  |              | 0.01      |                            | 0.10                      | T  |
| 25       | Woods     | 2,227        | "        | "                 |                    | 0.11            | 0.08                        | 0.08                         | 0.08                         |              |              | "               |              | No Runoff |                            |                           |  |
| Mar. 6-7 |           |              | A. E.    | Std. 10:30P       | 480                | 0.11            |                             |                              |                              | 68           | 37           |                 |              | No Runoff |                            |                           | 0.000  |
| 10-11-12 | Cult.     | 2,546        | A. E.    | 10:00A            | 2900               | 1.68            | 0.48                        | 0.36                         | 0.30                         | 54           | 20           | 10:13P          | 4AM          | 0.41      | 0.37                       | 6:30PM                    | 1.17   |
|          | Past.     | 3,568        | "        | "                 |                    | 1.78            | 0.48                        | 0.36                         | 0.30                         |              |              | 11:02P          | 4:10A        | 0.35      | 0.33                       |                           | 1.23   |
|          | Woods     | 2,227        | "        | "                 |                    | 1.55            | 0.48                        | 0.36                         | 0.30                         |              |              |                 |              | No Runoff |                            |                           | 0.009  |
| 17       |           |              | "        | "                 |                    | 0.08            |                             |                              |                              | 74           | 34           |                 |              | "         |                            |                           | 0.000  |
| 19(1)    |           |              | "        | 8:00A             | 150                | 0.10            |                             |                              |                              | 46           | 25           |                 |              | "         |                            |                           | 0.000  |
| 19(2)    |           |              | "        | 7:30P             | 210                | 0.08            |                             |                              |                              |              |              |                 |              | No Runoff |                            |                           | 0.000  |
| 21       |           |              | "        | 5:30A             | 810                | 0.10            |                             |                              |                              |              |              |                 |              | "         |                            |                           | 0.000  |
| 23       | Cult.     | 2,546        | "        | 10:10A            | 50                 | 0.68            | 2.40                        | 1.04                         | 1.00                         | 66           | 42           | 10:23A          | 5:20P        | 0.15      | 1.50                       | 10:32A                    | 0.335  |
| 23       | Past.     | 3,568        | "        | "                 |                    | 0.68            | 2.40                        | 1.04                         | 1.00                         | 64           | 42           | 10:30A          | 9:10A        | 0.09      | 0.51                       | 10:35A                    | 0.335  |
| 23       | Woods     | 2,227        | "        | "                 |                    | 0.68            | 2.40                        | 1.04                         | 1.00                         |              |              |                 |              | No Runoff |                            |                           | 0.001  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |
|          |           |              |          |                   |                    |                 |                             |                              |                              |              |              |                 |              |           |                            |                           |  |

NOTE: \* Rainfall and runoff plotted for this rain.



UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH March, 1935  
 SHEET 2 OF 6 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

Project Zanesville, Ohio

| Date       | Watershed |                 | Rainfall   |                 |                       |                    |                                |                                 | Temperature<br>(degrees F.)     |                    | Run-off         |                 |                    |                                      | Rapidly Moving<br>(inches) | Silt Loss<br>(tons per acre) | Condition of Watershed |  |
|------------|-----------|-----------------|------------|-----------------|-----------------------|--------------------|--------------------------------|---------------------------------|---------------------------------|--------------------|-----------------|-----------------|--------------------|--------------------------------------|----------------------------|------------------------------|------------------------|--|
|            | Number    | Area<br>(acres) | Gage No.   | Began<br>(hour) | Duration<br>(minutes) | Amount<br>(inches) | Maximum Intensity              |                                 |                                 | Maximum<br>Minimum | Began<br>(hour) | Ended<br>(hour) | Amount<br>(inches) | Maximum Rate                         |                            |                              |                        |  |
|            |           |                 |            |                 |                       |                    | 5 minutes<br>(inches per hour) | 15 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) |                    |                 |                 |                    | On ft. sec.                          | Time                       |                              |                        |  |
| (1)        | (2)       | (3)             | (4)        | (5)             | (6)                   | (7)                | (8)                            | (9)                             | (10)                            | (11)               | (12)            | (13)            | (14)               | (15)                                 | (16)                       | (17)                         | (18)                   | (19)   |
| Mar. 25    | Cult.     | 2.546           |            | 6:15A           | 75                    | 0.16               | 0.72                           | 0.32                            | 0.20                            | 59                 | 38              | 6:26A           | 9:10A              | 0.03                                 | 0.05                       | 6:55A                        | 0.13                   |  |
| 25         | Past.     | 3.568           |            |                 |                       | 0.16               | 0.72                           | 0.32                            | 0.20                            |                    |                 |                 |                    | No Runoff                            |                            |                              | 0.000                  |  |
| 25         | Woods     | 2.227           |            |                 |                       | 0.16               | 0.72                           | 0.32                            | 0.20                            |                    |                 |                 |                    | No Runoff                            |                            |                              | 0.000                  |  |
| 28         |           |                 |            |                 |                       | 0.06               |                                |                                 |                                 | 68                 | 33              |                 |                    | No Runoff                            |                            |                              | 0.000                  |  |
| 31         |           |                 |            |                 |                       | 0.07               |                                |                                 |                                 | 57                 | 40              |                 |                    | No Runoff                            |                            |                              | 0.000                  |  |
| 4-5-35     | Cult.     |                 | A. B. Rec. | 10:00A          | all day               | 0.19               |                                |                                 |                                 | 58                 | 32              | 4:47P           | 8:56P              | 0.04                                 | 0.12                       | 7-36                         | 0.70                   | Apr. 4--sowed 5 lbs. per A.<br>Lespedeza Past. W. S.                                   |
| 4-6-7-8-35 | Past.     |                 | "          | 8:00P           | 2100                  | 0.74               | 0.24                           | 0.20                            | 0.18                            | 48                 | 35              |                 |                    | No Runoff                            |                            |                              |                        |  |
| 4-11-12-13 | Woods     |                 |            |                 |                       |                    |                                |                                 |                                 | 56                 | 35              | 3:11P           | 12:15P             | 0.05                                 | 0.05                       | 3-12                         | 0.53                   | Apr. 11--8 lbs. timothy & clover<br>per acre. Sown on Cult. W. S.<br>to improve stand. |
| 4-11-12-13 | Cult.     |                 | "          | 12:30P          | 2700                  | 0.58               | 0.24                           | 0.12                            | "                               |                    |                 | 3:00P           | 12:15P             | 0.01                                 | "                          | 12:15A                       | 0.57                   |  |
| 4-27       | Past.     |                 | "          | "               | "                     | "                  | "                              | "                               | "                               |                    |                 | 2:55P           | 4AM                | No Runoff                            | "                          |                              |                        |  |
| 4-27       | Woods     |                 | "          | "               | "                     | 0.06               | "                              | "                               | "                               | 80                 | 44              |                 |                    | No Runoff                            | "                          |                              |                        |  |
| 4-29       |           |                 | "          | "               | "                     | 0.10               | "                              | "                               | "                               | 73                 | 52              |                 |                    | "                                    | "                          |                              |                        |  |
| 5-2        | Cult.     |                 | "          | 5-2             | 490                   | 1.94               | 1.40                           | 0.92                            | 0.72                            | 54                 | 35              | 5:53A           | 4PM                | 0.61                                 | 2.02                       | 9:35A                        | 1.33                   | Rain below<br>Meadow 5" high   |
| 5-2        | Past.     |                 | "          | 2AM             | "                     | "                  | "                              | "                               | "                               |                    |                 | 10:05A          | 4:20P              | 0.23                                 | 0.29                       | 10:50A                       | 1.71                   | combined   |
| 5-2-3      | Woods     |                 | "          | "               | "                     | "                  | "                              | "                               | "                               |                    |                 | 9:45A           | 8:53P              | 0.39                                 | 0.19                       | 11:18A                       | 1.55                   | with this  |
| 5-2-3      | Cult.     |                 | "          | 8:55P           | 180                   | 0.51               | 0.72                           | 0.44                            | 0.26                            | 60                 | 35              |                 |                    | 0.32                                 | "                          |                              | 0.390                  |  |
| 5-2-3      | Past.     |                 | "          | "               | "                     | "                  | "                              | "                               | "                               |                    |                 |                 |                    | 0.08                                 | "                          |                              | 0.009                  | May 2 & May 3-3  |
| 5-2-3      | Woods     |                 | "          | "               | "                     | "                  | "                              | "                               | "                               |                    |                 |                 |                    | Runoff from rain above included this | "                          |                              | 0.005                  |  |
| 5-5        |           |                 | "          | 1PM             | 40                    | 0.06               |                                |                                 |                                 | 45                 | 35              |                 |                    |                                      |                            |                              |                        |  |
| 5-6-7      | Cult.     |                 | "          | 6AM             | 1440                  | 1.67               | 1.38                           | 0.64                            | 0.58                            | 60                 | 43              | May 6           | May 7              | 0.95                                 | 1.72                       | May 6                        | 0.72                   |  |
| 5-6-7      | Past.     |                 | "          | "               | "                     | 1.67               | "                              | "                               | "                               |                    |                 | 3:11P           | 6:10A              | 0.64                                 | 1.25                       | 9:48P                        | 1.03                   |  |
| 5-6-7      | Woods     |                 | "          | "               | "                     | 1.69               | "                              | "                               | "                               |                    |                 | 9:15P           | 8:24A              | 0.40                                 | 0.15                       | 11:45P                       | 1.29                   |  |
| 5-9        | Cult.     |                 | "          | 6:30P           | 105                   | 0.32               | 0.72                           | 0.24                            | 0.16                            | 68                 | 43              |                 |                    | 0.04                                 | "                          |                              | 0.009                  | Meadow 7"-8" high  |
| 5-9        | Past.     |                 | "          | "               | "                     | "                  | "                              | "                               | "                               |                    |                 |                 |                    | No Runoff                            | "                          |                              | 0.000                  |  |
| 5-9        | Woods     |                 | "          | "               | "                     | "                  | "                              | "                               | "                               |                    |                 |                 |                    | "                                    | "                          |                              | 0.000                  |  |
| 5-13-14    |           |                 | "          | 2:15A           | 1680                  | 0.22               |                                |                                 |                                 | 73                 | 53              |                 |                    | "                                    | "                          |                              | 0.000                  |  |
| 5-16       |           |                 | "          | "               | "                     | 0.02               |                                |                                 |                                 | 61                 | 42              |                 |                    | "                                    | "                          |                              | 0.000                  |  |
| 5-22       |           |                 | "          | 5:00P           | 200                   | 0.14               |                                |                                 |                                 | 72                 | 42              |                 |                    | "                                    | "                          |                              | 0.000                  |  |
| 5-29       |           |                 | "          | 8:10A           | 220                   | 0.46               | 0.72                           | 0.52                            | 0.38                            | 82                 | 60              |                 |                    |                                      |                            |                              | 0.000                  | Meadow 10" high  |





UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH 19 35  
 SHEET 3 OF 6 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

 PROJECT Zanesville, Ohio

| DATE    | WATERSHED |              | RAINFALL   |              |                    |                 |                             |                              |                              | TEMPERATURE (degrees F) |         | RUN-OFF      |              |                 |              | RAINFALL MINUS RUN-OFF (inches) | SIZE LOSS (tons per acre) | CONDITION OF WATERSHED       |      |
|---------|-----------|--------------|------------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|-------------------------|---------|--------------|--------------|-----------------|--------------|---------------------------------|---------------------------|------------------------------|------|
|         | Number    | Area (acres) | Gage No.   | Began (hour) | Duration (minutes) | Amount (inches) | MAXIMUM INTENSITY           |                              |                              | Maximum                 | Minimum | Began (hour) | Ended (hour) | Amount (inches) | MAXIMUM RATE |                                 |                           |                              |      |
|         |           |              |            |              |                    |                 | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |                         |         |              |              |                 | Cu. ft. sec. |                                 |                           |                              | Time |
| (1)     | (2)       | (3)          | (4)        | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)                    | (12)    | (13)         | (14)         | (15)            | (16)         | (17)                            | (18)                      | (19)                         |      |
| 6-2     |           |              | A. E. Rec. | 2:15P        | 250                | 0.25            | 0.48                        | 0.24                         | 0.24                         | 77                      | 51      |              |              | No Runoff       |              |                                 | 0.000                     |                              |      |
| 6-3     | Cult.     |              | "          | 6:50P        | 240                | 0.58            | 0.48                        | 0.28                         | 0.22                         | 84                      | 56      |              |              | T               |              |                                 | T                         | Meadow 12-14" high           |      |
| 6-5     | Past.     |              | "          | "            | "                  | "               | "                           | "                            | "                            | "                       | "       |              |              | No Runoff       |              |                                 | 0.000                     |                              |      |
| 6-6     | Woods     |              | "          | 4:00P        | 35                 | 0.24            | 1.20                        | 0.64                         | 0.38                         | 73                      | 52      |              |              | "               |              |                                 | 0.000                     |                              |      |
| 6-7     |           |              | "          | 9:30P        | 90                 | 0.10            |                             |                              |                              | 68                      | 45      |              |              | "               |              |                                 | 0.000                     |                              |      |
| 6-14    |           |              | "          | 12:35P       | 75                 | 0.12            |                             |                              |                              | 72                      | 50      |              |              | "               |              |                                 | 0.000                     | Horses turned on Past. W. S. |      |
| 6-15    |           |              | "          | 2:00P        | 140                | 0.06            |                             |                              |                              | 84                      | 61      |              |              | "               |              |                                 | 0.000                     | June 8                       |      |
| 6-16    |           |              | "          | 10:15P       | 20                 | 0.18            | 1.20                        | 0.52                         | 0.28                         | 82                      | 60      |              |              | "               |              |                                 | 0.000                     |                              |      |
| 6-17    |           |              | "          | 10:00A       | 60                 | 0.06            |                             |                              |                              | 86                      | 68      |              |              | "               |              |                                 | 0.000                     |                              |      |
| 6-18    |           |              | "          | 1:55A        | 100                | 0.10            |                             |                              |                              | 82                      | 68      |              |              | "               |              |                                 | 0.000                     |                              |      |
| 6-18    | Cult.     |              | "          | 12:58P       | 72                 | 0.58            | 3.60                        | 1.20                         | 0.60                         | 78                      | 65      | 11:03P       | 2:37         | No Runoff       |              | 0.53                            | See Below                 |                              |      |
| 6-18-19 | Past.     |              | "          | "            | "                  | "               | "                           | "                            | "                            |                         |         |              |              | No Runoff       |              |                                 | 0.000                     |                              |      |
| 6-18-19 | Woods     |              | "          | 5:00P        | 615                | 0.40            | 1.80                        | 0.60                         | 0.30                         | 84                      | 64      |              |              | No Runoff       |              |                                 | 0.000                     | All rains 18-19              |      |
| 6-19    |           |              | "          | "            | "                  | "               | "                           | "                            | "                            |                         |         |              |              | No Runoff       |              |                                 | 0.000                     |                              |      |
| 6-19    | Cult.     |              | "          | 2:30         | 15                 | 0.12            | 0.72                        | 0.32                         | 0.24                         | 84                      | 64      |              |              | "               |              |                                 | 0.000                     |                              |      |
| 6-19    | Past.     |              | "          | "            | "                  | "               | "                           | "                            | "                            |                         |         |              |              | "               |              |                                 | 0.000                     |                              |      |
| 6-19    | Woods     |              | "          | "            | "                  | "               | "                           | "                            | "                            |                         |         |              |              | "               |              |                                 | 0.000                     |                              |      |
| 6-21    | Cult.     |              | "          | 2:45A        | 800                | 0.32            | 0.36                        | 0.28                         | 0.12                         | 73                      | 49      |              |              | No Runoff       |              |                                 | 0.000                     | Meadow 16"-18" high          |      |
| 6-21    | Past.     |              | "          | "            | "                  | "               | "                           | "                            | "                            |                         |         |              |              | "               |              |                                 | 0.000                     |                              |      |
| 6-21    | Woods     |              | "          | "            | "                  | "               | "                           | "                            | "                            |                         |         |              |              | "               |              |                                 | 0.000                     |                              |      |
| 6-21-22 | Cult.     |              | "          | 9:55P        | 300                | 1.36            | 3.30                        | 2.64                         | 1.52                         | 73                      | 49      | 11:23P       | 6:20A        | 0.60            | 5.55         | 11:34P                          | 0.190                     |                              |      |
| 6-21-22 | Past.     |              | "          | "            | "                  | "               | "                           | "                            | "                            |                         |         | 11:23P       | 6:10A        | 0.13            | 0.95         | 11:32                           | 0.010                     |                              |      |
| 6-21-22 | Woods     |              | "          | "            | "                  | "               | "                           | "                            | "                            |                         |         |              |              | No Runoff       |              |                                 | T                         |                              |      |
| 6-22    |           |              | "          |              |                    | 0.04            |                             |                              |                              | 71                      | 52      |              |              | "               |              |                                 |                           |                              |      |
| 7-3-4   | Cult.     |              | "          | 7:15P        | 900                | 0.88            | 2.40                        | 1.20                         | 0.80                         | 87                      | 63      |              |              | 0.01            |              | 0.87                            | T                         |                              |      |
| 7-3-4   | Past.     |              | "          | "            | "                  | "               | "                           | "                            | "                            |                         |         |              |              | T               |              |                                 | T                         |                              |      |
| 7-3-4   | Woods     |              | "          | "            | "                  | "               | "                           | "                            | "                            |                         |         |              |              | No Runoff       |              |                                 | 0.000                     |                              |      |
| 7-8     |           |              | "          |              |                    | 0.04            |                             |                              |                              | 87                      | 65      |              |              | No Runoff       |              |                                 | 0.000                     | July 17--Meadow out on       |      |
| 7-15    |           |              | " Std.     | 1PM          | 300                | 0.19            | 0.72                        | 0.32                         | 0.22                         | 86                      | 65      |              |              | "               |              |                                 | 0.000                     | Cult. W. S.                  |      |



## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

PROJECT Zanesville, Ohio

| Date     | Watered |              | Rainfall   |              |                    |                 |                             |                              |                              | Temperature (degrees F.) |              | Run-off      |                |              |       | Rainfall Meter (inches) | Silt Loss (tons per acre)  | Condition of Watershed |
|----------|---------|--------------|--|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|--------------------------|--------------|--------------|----------------|--------------|-------|-------------------------|--|------------------------|
|          | Number  | Acre (acres) | Once No.   | Began (hour) | Duration (minutes) | Amount (inches) | Maximum Intensity           |                              |                              | Maximum Minimum          | Began (hour) | Ended (hour) | Amount (acres) | Maximum Rate |       |                         |  |                        |
|          |         |              |  |              |                    |                 | 4 minutes (inches per hour) | 16 minutes (inches per hour) | 30 minutes (inches per hour) |                          |              |              |                | Cu. ft. sec. | Time  |                         |  |                        |
|          |         |              |  |              |                    |                 |                             |                              |                              |                          |              |              |                |              |       |                         |  |                        |
| (1)      | (2)     | (3)          | (4)  | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)                     | (12)         | (13)         | (14)           | (15)         | (16)  | (17)                    | (18)   |                        |
| 7-19     |         |              | A.E. Rec.  | 2:25P        | 30                 | 0.41            | 1.44                        | 1.08                         | 0.78                         | 81                       | 69           |              | No Runoff      |              |       |                         | 0.000  |                        |
| 7-21     |         |              | "  | 2:15A        | 65                 | 0.19            | 0.24                        | 0.16                         | 0.16                         | 92                       | 67           |              | "              | "            |       |                         | 0.000  |                        |
| 7-24     |         |              | "  | 5:15P        | 200                | 0.24            | 0.24                        | 0.16                         | 0.10                         | 85                       | 69           |              | "              | "            |       |                         | 0.000  |                        |
| 7-26     |         |              | "  | 2:00P        | 200                | 0.44            | 1.80                        | 1.48                         | 0.82                         | 83                       | 68           |              |                |              |       |                         |  |                        |
| 7-28     | Cult.   |              | "  | 12:30P       | 95                 | 1.17            | 5.80                        | 1.80                         | 1.30                         | 87                       | 66           | 1PM          | 2:37P          | 0.25         | 2.40  | 1.44P                   | 0.078  |                        |
|          | Past.   |              | "  | "            | "                  | .85             | 3.40                        | 1.50                         | 1.10                         |                          |              | 1:17P        | 1:33P          | T.           | 0.05  | 1:25P                   | 0.000  |                        |
|          | Woods   |              | "  | "            | "                  | .98             |                             |                              | "                            |                          |              |              | No Runoff      |              |       |                         |  |                        |
| 8-1      |         |              | "  | 12:30A       | 240                | 0.61            | 2.64                        | 0.88                         | 0.44                         | 90                       | 69           |              | No Runoff      |              |       |                         | 0.000  |                        |
| 8-2      | Cult.   |              | "  | 1:30A        | 45                 | 0.30            | 1.68                        | 1.00                         | 0.52                         | 90                       | 69           |              | 0.03           | No Runoff    |       | 0.27                    | Regrowth 4" - 5" high  |                        |
|          | Past.   |              | "  | "            | "                  | "               | "                           | "                            | "                            |                          |              |              | "              | "            |       |                         |  |                        |
|          | Woods   |              | "  | "            | "                  | "               | "                           | "                            | "                            |                          |              |              | No Runoff      |              |       |                         | 0.000  |                        |
| 8-2 (PM) |         |              | "  | 12:15P       | 10                 | 0.06            |                             |                              |                              | 90                       | 69           |              | No Runoff      |              |       |                         |  |                        |
|          |         |              | Std. gauge Cult. W. S. = 1.08 Rain above and below |              |                    |                 |                             |                              |                              |                          |              |              |                |              |       |                         |  |                        |
| 8-3      | Cult.   |              | "  | 12:18A       | 60                 | 1.02            | 2.35                        | 2.35                         | 1.46                         | 91                       | 66           | 12:19A       | 3:13A          | 0.38         | 4.30  | 1:18A                   | 0.64   |                        |
|          | Past.   |              | "  | "            | "                  | 0.86            | 1.89                        | 1.89                         | 1.24                         |                          |              | 1:11A        | 2:20A          | 0.14         | 12.33 | 1:20A                   | 0.72   |                        |
|          | Woods   |              | "  | "            | "                  | 0.86            | 1.89                        | 1.89                         | 1.24                         |                          |              |              | Trace          |              |       |                         | T  |                        |
| 8-3      | Cult.   |              | "  | 2:50P        | 40                 | 0.40            | 1.44                        | 0.92                         | 0.60                         |                          |              | 2:58P        | 6:30P          | 0.11         | 0.51  | 3:06P                   | 0.054  |                        |
|          | Past.   |              | "  | "            | "                  | "               | "                           | "                            | "                            |                          |              |              | Trace          |              |       |                         |  |                        |
|          | Woods   |              | "  | "            | "                  | "               | "                           | "                            | "                            |                          |              |              | Trace          |              |       |                         |  |                        |
| 8-7      | Cult.   |              | "  | 11:35P       | 540                | 2.63            | 5.85                        | 3.84                         | 2.26                         | 88                       | 66           | 4:21P        | 4:00A          | 1.46         | 6.92  | 6:02P                   | 0.351  |                        |
|          | Past.   |              | "  | Aug. 6       | 540                | 2.42            | "                           | "                            | "                            |                          |              | 4:37P        | 9:16P          | 0.99         | 6.18  | 5:58P                   | 0.016  |                        |
|          | Woods   |              | "  | "            | "                  | 2.45            | "                           | "                            | "                            |                          |              | 6:04         | 11:05P         | 0.05         | 0.05  | 7:30P                   | T  |                        |
| 8-10     | Cult.   |              | "  | 12:40P       | 300                | 1.71            | 5.00                        | 4.80                         | 2.64                         | 85                       | 66           | 12:43P       | 7:39P          | 0.78         | 9.93  | 12:50P                  | 0.187  |                        |
|          | Past.   |              | "  | "            | "                  | 1.61            | "                           | "                            | "                            |                          |              | 12:45P       | 5:49P          | 0.42         | 7.15  | 12:48P                  | 0.011  |                        |
|          | Woods   |              | "  | "            | "                  | 1.60            | "                           | "                            | "                            |                          |              | 12:50P       | 8:38P          | 0.05         | 0.09  | 1:00P                   |  |                        |
| 8-16     |         |              | "Std.  | 6AM          | 210                | 0.32            | 0.12                        | 0.12                         | 0.10                         | 86                       | 68           |              | No Runoff      |              |       |                         |  |                        |
| 8-17     |         |              | A.E. Rec.  | 3AM          | 1440               | 0.20            | 0.04                        | 0.04                         | 0.04                         | 80                       | 68           |              | "              | "            |       |                         |  |                        |
| 8-27     | Cult.   |              | "  | 3:42P        | 150                | 1.08            | 1.72                        | 1.24                         | 0.96                         | 67                       | 64           | 5:05P        | 6:40P          | 0.12         | 1.30  | 5:50P                   | 0.014  |                        |
|          | Past.   |              | "  | "            | "                  | 1.21            | "                           | "                            | "                            |                          |              | 5:26P        | 7:10P          | 0.18         | 1.75  | 6:08P                   | 0.004  |                        |
|          | Woods   |              | "  | "            | "                  | 1.11            | "                           | "                            | "                            |                          |              |              | Trace          |              |       |                         | T  |                        |
|          |         |              |  |              |                    |                 |                             |                              |                              |                          |              |              |                |              |       |                         | Past. W. S. mowed Aug. 19 to 4" and raked. Regrowth 8" - 9" high |                        |





UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

Project Zanesville, OhioMONTH 19 25SHEET 5 OF 6 SHEETS

| DATE     | WATERSHED |              |          | RAINFALL     |                    |                             |                              |                              | TEMPERATURE (degrees F.) |         |             | RUN-OFF      |                 |              |        | RAINFALL MONTH RUN-OFF (inches) | SET LOSS (tons per acre) | CONDITION OF WATERSHED |
|----------|-----------|--------------|----------|--------------|--------------------|-----------------------------|------------------------------|------------------------------|--------------------------|---------|-------------|--------------|-----------------|--------------|--------|---------------------------------|--------------------------|------------------------|
|          | Number    | Area (acres) | Gage No. | Begin (hour) | Duration (minutes) | MAXIMUM INTENSITY           |                              |                              | Maximum                  | Minimum | Peak (hour) | Faded (hour) | Amount (inches) | MAXIMUM RATE |        |                                 |                          |                        |
|          |           |              |          |              |                    | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |                          |         |             |              |                 | Cu. ft. sec. | Time   |                                 |                          |                        |
| (1)      | (2)       | (3)          | (4)      | (5)          | (6)                | (7)                         | (8)                          | (9)                          | (10)                     | (11)    | (12)        | (13)         | (14)            | (15)         | (16)   | (17)                            | (18)                     | (19)                   |
| 9-3      | Cult.     | A.E. Rec.    | 1:25A    | 5:10         | 1:18               | 0.58                        | 0.28                         | 0.24                         | 60                       | 53      | 4:25A       | 11:50A       | 0.11            | 0.16         | 9:20A  | 1.07                            | T                        |                        |
|          | Past.     | "            | "        | "            | 1.15               | "                           | "                            | "                            | "                        | "       | 9:17A       | 3:50P        | 0.05            | 0.15         | 10:00A | 1.10                            | 0.000                    |                        |
|          | Woods     | "            | "        | "            | 1.17               | "                           | "                            | "                            | "                        | "       |             |              | No Runoff       |              |        |                                 |                          |                        |
| 9-4      | Cult.     | "            | "        | 1:50A        | 5:00               | 0.49                        | 0.48                         | 0.42                         | 66                       | 60      | 4:47A       | 12:53P       | 0.21            | 0.30         | 9:55A  | 0.28                            | 0.007                    |                        |
|          | Past.     | "            | "        | "            | "                  | "                           | "                            | "                            | "                        | "       | 4:36A       | 6:30P        | 0.04            | 0.50         | 9:40A  | 0.45                            | 0.002                    |                        |
|          | Woods     | "            | "        | "            | "                  | "                           | "                            | "                            | "                        | "       |             |              | No Runoff       |              |        | 0.001                           |                          |                        |
| 9-9      | Cult.     | "            | "        | 10:10A       | 275                | 0.42                        | 0.28                         | 0.18                         | 80                       | 59      |             |              | T               | No Runoff    |        |                                 | T                        | Regrowth 10" high      |
|          | Past.     | "            | "        | "            | "                  | "                           | "                            | "                            | "                        | "       |             |              | No Runoff       |              |        |                                 |                          |                        |
|          | Woods     | "            | "        | "            | "                  | "                           | "                            | "                            | "                        | "       |             |              | "               | "            |        |                                 |                          |                        |
| 9-19     |           | "            | "        | 10:40P       | 40                 | 0.32                        | 1.16                         | 0.62                         | 85                       | 61      |             |              | "               | "            |        |                                 |                          |                        |
| 9-27-28  |           | "            | "        | 12:50P       | 1020               | 0.30                        |                              |                              | 75                       | 50      |             |              | "               | "            |        |                                 |                          |                        |
| 10-1     |           | A.E. Rec.    | 5:10A    | 320          | 0.52               | 0.72                        | 0.32                         | 0.22                         | 65                       | 35      |             |              | No Runoff       |              |        |                                 |                          |                        |
| 10-11    |           | "            | 1:00P    | 180          | 0.20               | 0.36                        | 0.24                         | 0.12                         | 60                       | 44      |             |              | "               | "            |        |                                 |                          |                        |
| 10-14-15 |           | "            | 11:00P   | 125          | 0.15               | 0.12                        | 0.12                         | 0.12                         | 77                       | 48      |             |              | "               | "            |        |                                 |                          |                        |
| 10-21    |           | "            | 3:00P    | 200          | 0.13               | 0.12                        | 0.12                         | 0.12                         | 75                       | 55      |             |              | "               | "            |        |                                 |                          |                        |
| 10-22-23 |           | "            | 8:45P    | 60           | 0.13               | 0.12                        | 0.12                         | 0.12                         | 77                       | 51      |             |              | "               | "            |        |                                 |                          |                        |
| 10-28-29 | Cult.     | "            | 6:00P    | 1200         | 0.52               | 0.48                        | 0.16                         | 0.14                         | 72                       | 45      |             |              | "               | "            |        |                                 |                          |                        |
|          | Past.     | "            | "        | "            | "                  | "                           | "                            | "                            | "                        | "       |             |              | "               | "            |        |                                 |                          |                        |
|          | Woods     | "            | "        | "            | "                  | "                           | "                            | "                            | "                        | "       |             |              | "               | "            |        |                                 |                          |                        |
| 11-5     |           | A.E. Rec.    | 7AM      | 315          | 0.28               | 0.24                        | 0.12                         | 0.12                         | 76                       | 55      |             |              | No Runoff       |              |        |                                 |                          |                        |
| 11-7     |           | "            | 4PM      | 165          | 0.15               | 0.10                        | 0.08                         | 0.07                         | 51                       | 31      |             |              | "               | "            |        |                                 |                          |                        |
| 11-10    |           | "            | 4:30A    | 50           | 0.10               | 0.15                        | 0.12                         | 0.10                         | 62                       | 36      |             |              | "               | "            |        |                                 |                          |                        |
| 11-11    | Cult.     | "            | 3:47P    | 320          | 0.96               | 2.11                        | 1.04                         | 0.60                         | 63                       | 39      | 8:16P       | 9:37P        | 0.04            | 0.19         | 8:37P  | 0.92                            | 0.003                    |                        |
|          | Past.     | "            | "        | "            | 0.95               | "                           | "                            | "                            | "                        | "       | 8:34P       | 9:28P        | 0.03            | 0.28         | 8:51P  | 0.92                            | T                        |                        |
|          | Woods     | "            | "        | "            | 0.96               | "                           | "                            | "                            | "                        | "       |             |              | T               |              |        |                                 |                          |                        |
| 11-12    | Cult.     | "            | 4:15P    | 360          | 0.62               | 0.96                        | 0.52                         | 0.46                         | 61                       | 50      | 7:44P       | 12:37A       | 0.17            | 0.38         | 8:17P  | 0.45                            | 0.004                    |                        |
|          | Past.     | "            | "        | "            | "                  | "                           | "                            | "                            | "                        | "       | 8:16P       | 1:25A        | 0.18            | 0.61         | 8:43P  | 0.44                            | 0.003                    |                        |
|          | Woods     | "            | "        | "            | "                  | "                           | "                            | "                            | "                        | "       |             |              | No Runoff       |              |        |                                 |                          |                        |



UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
DIVISION OF RESEARCHMONTH       , 1935  
SHEET 6 OF 6 SHEETS

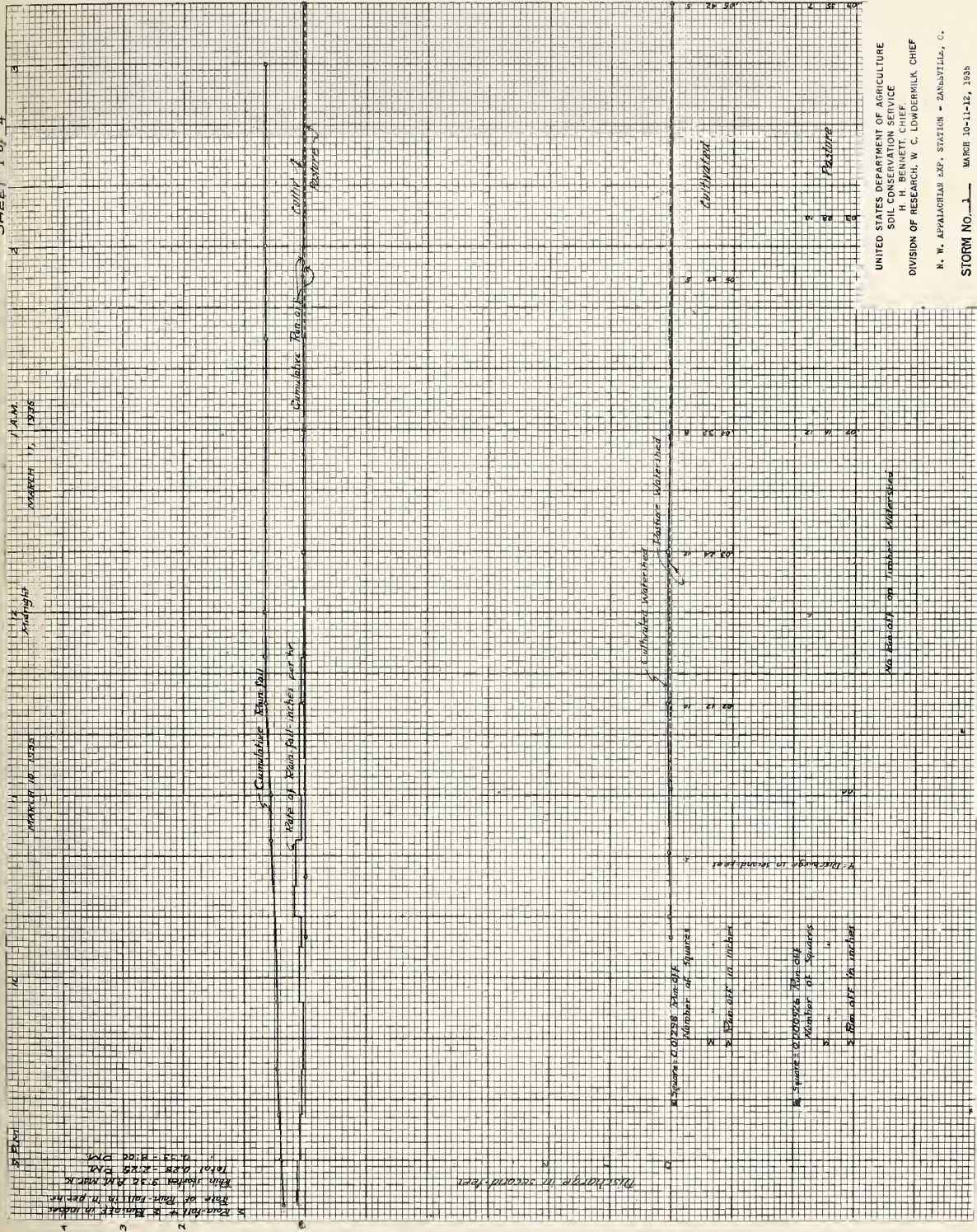
## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

PROJECT Zanesville, Ohio

| DATE     | WATERSHED |              |           | RAINFALL     |                    |                             |                              |                              | TEMPERATURE (degrees F.) |         |              |              | RUN-OFF         |              |      | RAINFALL MINUS RUN-OFF (inches) | Silt Loss (tons per acre) | CONDITION OF WATERSHED              |
|----------|-----------|--------------|-----------|--------------|--------------------|-----------------------------|------------------------------|------------------------------|--------------------------|---------|--------------|--------------|-----------------|--------------|------|---------------------------------|---------------------------|-------------------------------------|
|          | Number    | Area (acres) | Gage No.  | Begin (hour) | Duration (minutes) | MAXIMUM INTENSITY           |                              |                              | Maximum                  | Minimum | Begin (hour) | Ended (hour) | Amount (inches) | MAXIMUM RATE |      |                                 |                           |                                     |
|          |           |              |           |              |                    | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |                          |         |              |              |                 | Per ft. sec. | Time |                                 |                           |                                     |
| (1)      | (2)       | (3)          | (4)       | (5)          | (6)                | (7)                         | (8)                          | (9)                          | (10)                     | (11)    | (12)         | (13)         | (14)            | (15)         | (16) | (17)                            | (18)                      | (19)                                |
| 11-16    |           |              | A.E. Rec. |              |                    | 0.07                        |                              |                              |                          | 39      | 35           |              |                 | No Runoff    |      |                                 |                           |                                     |
| 11-19    |           |              | "         |              |                    | 0.07                        |                              |                              |                          | 44      | 34           |              |                 | "            |      |                                 |                           |                                     |
| 11-27-28 | Cult.     |              | "         | 12:20P       | 1260               | 0.70                        | 0.24                         | 0.16                         | 0.14                     | 56      | 35           |              |                 | 0.02         |      | 0.68                            | T                         |                                     |
|          | Past.     |              | "         | "            | "                  | "                           | "                            | "                            | "                        |         |              |              |                 | 0.04         |      | 0.66                            | T                         |                                     |
|          | Woods     |              | "         | "            | "                  | "                           | "                            | "                            | "                        |         |              |              |                 | 0.00         |      | 0.70                            | 0.00                      |                                     |
| 11-30    |           |              |           |              |                    | 0.10                        |                              |                              |                          | 29      | 25           |              |                 | No Runoff    |      |                                 |                           |                                     |
| 12-7-8-9 | Cult.     |              | A.S. Rec. | 2:30A        | 2760               | 0.94                        | 0.30                         | 0.24                         | 0.18                     | 53      | 28           | 6:50A        | 12PM            | 0.18         | 0.16 | 0.76                            | 0.001                     |                                     |
|          | Past.     |              | "         | "            | "                  | "                           | "                            | "                            | "                        |         |              | 5:50A        | Indet.          | 0.33         | 0.30 | 0.61                            | 0.001                     |                                     |
|          | Woods     |              | "         | "            | "                  | "                           | "                            | "                            | "                        |         |              |              |                 | No Runoff    |      | 0.94                            |                           |                                     |
| 12-10    | Cult.     |              | "         | 11:00A       | 300                | 0.14                        | 0.03                         | 0.03                         | 0.03                     | 50      | 37           |              |                 | No Runoff    |      |                                 | T                         |                                     |
|          | Past.     |              | "         | "            | "                  | "                           | "                            | "                            | "                        |         |              |              |                 | Trace        |      |                                 |                           |                                     |
|          | Woods     |              | "         | "            | "                  | "                           | "                            | "                            | "                        |         |              |              |                 | No Runoff    |      |                                 |                           |                                     |
| 12-12-13 |           | Snow         | "         | 10:00P       | 780                | 0.72                        | 0.11                         | 0.11                         | 0.11                     | 38      | 27           |              |                 | No Runoff    |      |                                 |                           |                                     |
| 12-14    | Cult.     |              | "         | 2:30A        | 120                | 0.14                        | 0.24                         | 0.24                         | 0.14                     | 34      | 32           |              |                 | 0.28         |      |                                 | 0.003                     | Runoff from melting snow Dec. 12-13 |
|          | Past.     |              | "         | "            | "                  | "                           | "                            | "                            | "                        |         |              |              |                 | 0.01         |      |                                 | T                         |                                     |
|          | Woods     |              | "         | "            | "                  | "                           | "                            | "                            | "                        |         |              |              |                 | T            |      |                                 | T                         |                                     |
| 12-16-17 |           | Snow         | "         | 10:00P       | 300                | 0.09                        |                              |                              |                          | 42      | 28           |              |                 | No Runoff    |      |                                 |                           |                                     |
| 12-19    |           | "            | "         | "            | "                  | 0.03                        |                              |                              |                          | 36      | 26           |              |                 | "            |      |                                 |                           |                                     |
| 12-21    |           | "            | A.E. Rec. | 11AM         | 300                | 0.18                        | 0.04                         | 0.04                         | 0.04                     | 19      | 0            |              |                 | "            |      |                                 |                           |                                     |
| 12-29    |           | "            | "         | 9AM          | 540                | 0.06                        |                              |                              |                          | 30      | 10           |              |                 | "            |      |                                 |                           |                                     |







UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
H. H. BENNETT, CHIEF  
DIVISION OF RESEARCH, W. C. LOWDERMILK, CHIEF  
N. W. APALACHIAN EXP. STATION - ZANESVILLE, O.

STORM NO. 11 MARCH 10-11-12, 1935  
Plot by P. S. [unclear] checked by C. F. [unclear]  
Computation by P. S. [unclear] data furnished by A. C. [unclear]





Cumulative Rain-fall 3

Cumulative Run-off

Rate of Pair-fall

24th Dec 7  
PASTURE

$\text{Square} = 0.001298$

| W                   | u | a | d |
|---------------------|---|---|---|
| E Bin-dec in inches |   |   |   |

| W                   | u | a | d |
|---------------------|---|---|---|
| E Bin-dec in inches |   |   |   |

Area of square = 0.000225 Run-off

Number of squares

Number of squares

Run-off in inches

Run-off in inches

No Run-off on Timber Watershed

Cultivated

2024/15/2024

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DIVISION OF RESEARCH, W. C. LOWDERMILK, CHIEF

J. W. APFALCHIAN EXP. STA. - ZANESVILLE, OHIO

STORM NO. 1  
MARCH 10-11-12, 1956

Plot by  $F_{K,N}$  date 5-1-59 checked by G.A.V. date .....  
 Computations by  $F_{K,N}$  date 3-4-59 checked by A.G.N. date .....





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N. W. APPALACHIAN EXP. STA. - ZANESVILLE, O.

STORM NO. 2 MARCH 10-11-12, 1935

Plot by F.K. date 3-4-39 checked by C.F.K. date             
 Computations by F.K. date 3-4-39 checked by A.C.M. date





[illegible]

12-1-2025 in Section 7-1

| Σ | n   | Number of squares |
|---|-----|-------------------|
| Σ | 2   | 1                 |
| Σ | 3   | 4                 |
| Σ | 4   | 9                 |
| Σ | 5   | 16                |
| Σ | 6   | 25                |
| Σ | 7   | 36                |
| Σ | 8   | 49                |
| Σ | 9   | 64                |
| Σ | 10  | 100               |
| Σ | 11  | 121               |
| Σ | 12  | 144               |
| Σ | 13  | 169               |
| Σ | 14  | 196               |
| Σ | 15  | 225               |
| Σ | 16  | 256               |
| Σ | 17  | 289               |
| Σ | 18  | 324               |
| Σ | 19  | 361               |
| Σ | 20  | 400               |
| Σ | 21  | 441               |
| Σ | 22  | 484               |
| Σ | 23  | 529               |
| Σ | 24  | 576               |
| Σ | 25  | 625               |
| Σ | 26  | 676               |
| Σ | 27  | 729               |
| Σ | 28  | 784               |
| Σ | 29  | 841               |
| Σ | 30  | 900               |
| Σ | 31  | 961               |
| Σ | 32  | 1024              |
| Σ | 33  | 1089              |
| Σ | 34  | 1156              |
| Σ | 35  | 1225              |
| Σ | 36  | 1296              |
| Σ | 37  | 1369              |
| Σ | 38  | 1444              |
| Σ | 39  | 1521              |
| Σ | 40  | 1600              |
| Σ | 41  | 1681              |
| Σ | 42  | 1764              |
| Σ | 43  | 1849              |
| Σ | 44  | 1936              |
| Σ | 45  | 2025              |
| Σ | 46  | 2116              |
| Σ | 47  | 2209              |
| Σ | 48  | 2304              |
| Σ | 49  | 2401              |
| Σ | 50  | 2500              |
| Σ | 51  | 2601              |
| Σ | 52  | 2704              |
| Σ | 53  | 2809              |
| Σ | 54  | 2916              |
| Σ | 55  | 3025              |
| Σ | 56  | 3136              |
| Σ | 57  | 3249              |
| Σ | 58  | 3364              |
| Σ | 59  | 3481              |
| Σ | 60  | 3600              |
| Σ | 61  | 3721              |
| Σ | 62  | 3844              |
| Σ | 63  | 3969              |
| Σ | 64  | 4096              |
| Σ | 65  | 4225              |
| Σ | 66  | 4356              |
| Σ | 67  | 4489              |
| Σ | 68  | 4624              |
| Σ | 69  | 4761              |
| Σ | 70  | 4900              |
| Σ | 71  | 5041              |
| Σ | 72  | 5184              |
| Σ | 73  | 5329              |
| Σ | 74  | 5476              |
| Σ | 75  | 5625              |
| Σ | 76  | 5776              |
| Σ | 77  | 5929              |
| Σ | 78  | 6084              |
| Σ | 79  | 6241              |
| Σ | 80  | 6400              |
| Σ | 81  | 6561              |
| Σ | 82  | 6724              |
| Σ | 83  | 6889              |
| Σ | 84  | 7056              |
| Σ | 85  | 7225              |
| Σ | 86  | 7396              |
| Σ | 87  | 7569              |
| Σ | 88  | 7744              |
| Σ | 89  | 7921              |
| Σ | 90  | 8100              |
| Σ | 91  | 8281              |
| Σ | 92  | 8464              |
| Σ | 93  | 8649              |
| Σ | 94  | 8836              |
| Σ | 95  | 9025              |
| Σ | 96  | 9216              |
| Σ | 97  | 9409              |
| Σ | 98  | 9604              |
| Σ | 99  | 9801              |
| Σ | 100 | 10000             |

| Run-off | Number of Squares |
|---------|-------------------|
| 1       | 1                 |
| 2       | 1                 |
| 3       | 1                 |
| 4       | 1                 |
| 5       | 1                 |
| 6       | 1                 |
| 7       | 1                 |
| 8       | 1                 |
| 9       | 1                 |
| 10      | 1                 |
| 11      | 1                 |
| 12      | 1                 |
| 13      | 1                 |
| 14      | 1                 |
| 15      | 1                 |
| 16      | 1                 |
| 17      | 1                 |
| 18      | 1                 |
| 19      | 1                 |
| 20      | 1                 |
| 21      | 1                 |
| 22      | 1                 |
| 23      | 1                 |
| 24      | 1                 |
| 25      | 1                 |
| 26      | 1                 |
| 27      | 1                 |
| 28      | 1                 |
| 29      | 1                 |
| 30      | 1                 |
| 31      | 1                 |
| 32      | 1                 |
| 33      | 1                 |
| 34      | 1                 |
| 35      | 1                 |
| 36      | 1                 |
| 37      | 1                 |
| 38      | 1                 |
| 39      | 1                 |
| 40      | 1                 |
| 41      | 1                 |
| 42      | 1                 |
| 43      | 1                 |
| 44      | 1                 |
| 45      | 1                 |
| 46      | 1                 |
| 47      | 1                 |
| 48      | 1                 |
| 49      | 1                 |
| 50      | 1                 |
| 51      | 1                 |
| 52      | 1                 |
| 53      | 1                 |
| 54      | 1                 |
| 55      | 1                 |
| 56      | 1                 |
| 57      | 1                 |
| 58      | 1                 |
| 59      | 1                 |
| 60      | 1                 |
| 61      | 1                 |
| 62      | 1                 |
| 63      | 1                 |
| 64      | 1                 |
| 65      | 1                 |
| 66      | 1                 |
| 67      | 1                 |
| 68      | 1                 |
| 69      | 1                 |
| 70      | 1                 |
| 71      | 1                 |
| 72      | 1                 |
| 73      | 1                 |
| 74      | 1                 |
| 75      | 1                 |
| 76      | 1                 |
| 77      | 1                 |
| 78      | 1                 |
| 79      | 1                 |
| 80      | 1                 |
| 81      | 1                 |
| 82      | 1                 |
| 83      | 1                 |
| 84      | 1                 |
| 85      | 1                 |
| 86      | 1                 |
| 87      | 1                 |
| 88      | 1                 |
| 89      | 1                 |
| 90      | 1                 |
| 91      | 1                 |
| 92      | 1                 |
| 93      | 1                 |
| 94      | 1                 |
| 95      | 1                 |
| 96      | 1                 |
| 97      | 1                 |
| 98      | 1                 |
| 99      | 1                 |
| 100     | 1                 |

|                                 |   |                        |                  |            |
|---------------------------------|---|------------------------|------------------|------------|
| Area (acres).....               | 2.546   | Cultivated, intermixed | Future Materials | 3.589      |
| Preceding Rain (in.).....       | March 6, 1935                                   |                        |                  | 0.11       |
| date begun.....                 | April 1   |                        |                  | 0          |
| duration (hours).....           | 8   |                        |                  | 2          |
| Temperature (max. & min.).....  | 45-50   |                        |                  | 54-20      |
| Soil (major type).....          | All   | loamking silt          | loamking silt    | All        |
| percent of area.....            | 14  |                        |                  | 14         |
| Slope, average (percent).....   | 18  |                        |                  | 14         |
| maximum.....                    | 18  |                        |                  | Blue Grass |
| cover, type.....                | new seedling                                    |                        |                  |            |
| height (ft.).....               | 4 inches  |                        |                  |            |
| date last cultivated.....       | 1935  |                        |                  |            |
| soil rose (comp. per acre)..... | 425   |                        |                  | 1009       |
| Remarks.....                    | Clear & Plucky<br>lander born in<br>west - 1934 |                        |                  |            |

Cultivated Aspers bed

culminated

*Castanea*

No Rainfall on Woods Watershed -

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STORM NO. 1      64-70CH 10-11-12, 1956

Plot by F.K.K. date 3-7-59 checked by C.F.K. date 3-4-59  
Computations by F.K.K. date 3-4-59 checked by A.C.N. date 3-4-59

Sheet 4 of 4 Sheets

Post. W.5. AE 5fd. 11.7B~

1.654

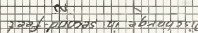
Run-off stops

Run off stops  
135-364-4:10 A.M.

[illegible]







Date of Pair-call in in. per hr.

### Currenting Rainfall

noted watershed

File # 85210070

Run off - 10 inches

[illegible]

0.390 (for May 2 -)  
(2 May 2-3 Rains)  
Clover & Timothy Meadow -  
Sum in that Apr. 1935

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STORM NO. 2 MAY 2, 1935

Plot by A. L. H. date 4-4-39 checked by E. K. date \_\_\_\_\_  
 Computations by A. C. M. date 4-5-39 checked by E. K. date \_\_\_\_\_





[illegible]

12. 20 12.00  
Rain during Night  
9 P.M. May 2 to 9 A.M.  
Above Rain Analyzed a  
to all Watersheds

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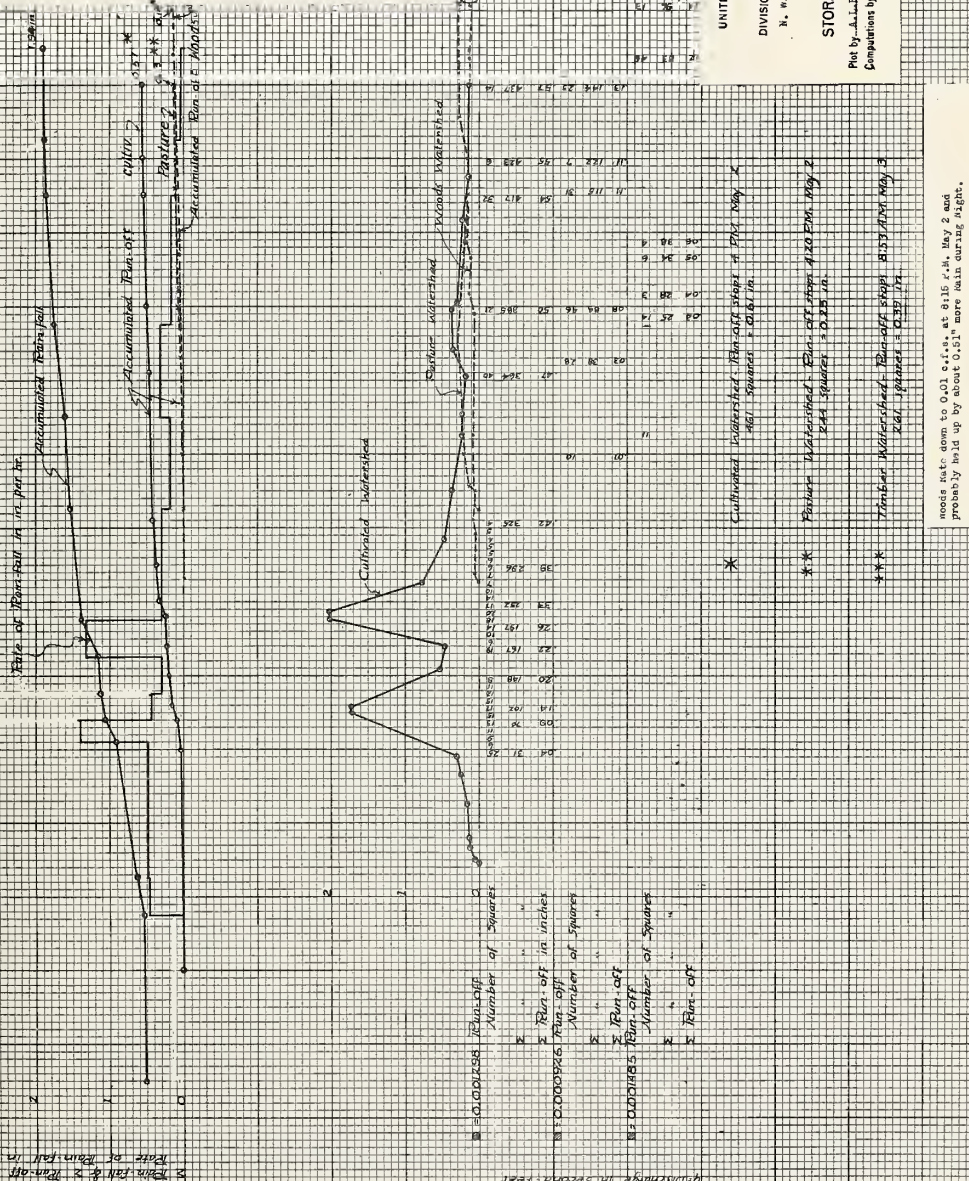
STORM NO. 2 MAY 2. 1935

Plot by A.L.M.F. date 4-4-39 checked by F.K. date \_\_\_\_\_  
 Computations by A.C.M. date 4-5-39 checked by G.F.K. date \_\_\_\_\_  
 Sheet 2 of 2 Sheets

ZANESVILLE, OHIO.

MAY 2.

SHEET 2 OF 2 SHEETS

 $10 \times 10^4 \text{ lb} \times 1000$ 





MAY 6-7 1935

Rate of Rainfall (inches per hr.)

Cumulative Rainfall  $\rightarrow$

86107095 Sound by Number

83010000

6. AMOUNT OF RAINFALL OVER AND ABOVE THE INDICATED INTENSITY

THE INDICATED TIME IS 11:0

STORM NO. 3 MAY 6-7, 1935

Plot by C.F.K. date 4-6-39 checked by A.H. date 4-6-39  
 Computations by F.K. date 4-6-39 checked by A.H. date 4-6-39

Sheet 1 of 4 Sheets

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N. W. AFFALACIUS EXP. STA. - ZANESVILLE, O.







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N. W. APPALACHIAN EXP. STA. - ZANESVILLE, O.

STORM NO. 3 MAY 6-7, 1955





३ विद्या-नाम ४ विद्या-कोटि न मन्त्रोक्त  
विष्णवे नमः इत्यादि ॥ १०५-१०६ ॥

The diagram illustrates the relationship between cumulative rainfall, runoff, and infiltration over time. The horizontal axis represents time, with a vertical line indicating the 'Time of Rainfall'. The vertical axis represents cumulative volume.

- Cumulative Rainfall:** A line that increases linearly from the origin (0,0) to a peak at the 'Time of Rainfall', then remains constant.
- Cumulative Runoff of Catchment:** A line that starts at the origin, remains at zero until the 'Time of Rainfall', then increases linearly with a shallower slope than the rainfall line, eventually reaching a constant value.
- Runoff Rate:** A rectangular pulse function that starts at the 'Time of Rainfall', has a constant height (the runoff rate), and ends at a later time.
- Cumulative Infiltration:** A line that starts at the origin, remains at zero until the 'Time of Rainfall', then increases linearly with a shallower slope than the runoff line, eventually reaching a constant value.

The diagram shows that the runoff rate is the difference between the cumulative rainfall and the cumulative infiltration. The total runoff is the difference between the final cumulative rainfall and the final cumulative infiltration.

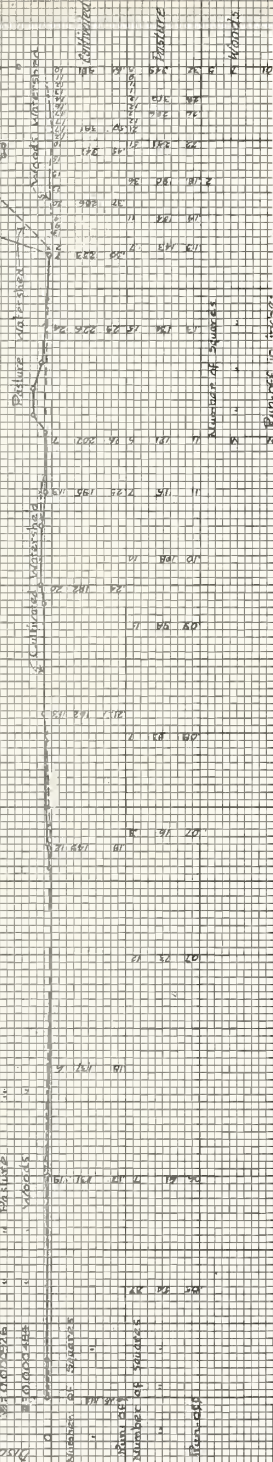
7.2.2. Prüfung im Abkündigung

[illegible]

Number of Squares

Number of samples

Printed on



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STORM NO. 3 MAY 6-7, 1936

Plot by \_\_\_\_\_ date \_\_\_\_\_ checked by \_\_\_\_\_ date \_\_\_\_\_  
 Computations by \_\_\_\_\_ date \_\_\_\_\_ checked by \_\_\_\_\_ date \_\_\_\_\_

Sheet 3 of 4 Sheets









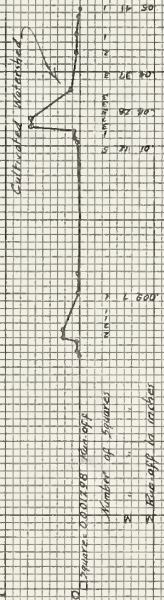
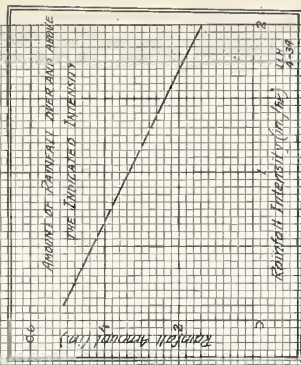


| Time (h) | Δt (min) | Δh (in) | Δh (in/h) |
|----------|----------|---------|-----------|
| 11:55    | 7        | 0.01    | 0.001     |
| 12:00    | 5        | 0.03    | 0.006     |
| 12:05    | 5        | 0.03    | 0.006     |
| 12:10    | 5        | 0.04    | 0.008     |
| 12:15    | 5        | 0.04    | 0.008     |
| 12:20    | 5        | 0.04    | 0.008     |
| 12:25    | 5        | 0.04    | 0.008     |
| 12:30    | 5        | 0.04    | 0.008     |
| 12:35    | 5        | 0.04    | 0.008     |
| 12:40    | 5        | 0.04    | 0.008     |
| 12:45    | 5        | 0.04    | 0.008     |
| 12:50    | 5        | 0.04    | 0.008     |
| 12:55    | 5        | 0.04    | 0.008     |
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| 13:05    | 5        | 0.04    | 0.008     |
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| 23:30    | 5        | 0.04    | 0.008     |
| 23:35    | 5        | 0.04    | 0.008     |
| 23:40    | 5        | 0.04    | 0.008     |
| 23:45    | 5        | 0.04    | 0.008     |
| 23:50    | 5        | 0.04    | 0.008     |
| 23:55    | 5        | 0.04    | 0.008     |
| 24:00    | 5        | 0.04    | 0.008     |

Storm Analysis by W. C. Lowdermilk

Cultivated watershed  
0.10  
June 18  
1 hr. 40 min.  
1945  
Watershed sit  
All  
Slope, average (percent)  
4  
16  
New season  
1.5  
0.42 (All runs June 18-19)  
Clegg & Lowdermilk  
Sum in sheet April, 1934.  
Remarks

Area (acres).....  
Precipitation (in).....  
date began.....  
duration (hours).....  
Temperature (max. & min.).....  
Soil (major type).....  
percent of area.....  
Slope, average (percent).....  
maximum.....  
Cover, type.....  
height (ft.).....  
date last cultivated.....  
Soil loss (ton per acre).....  
Remarks.....



UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
H. H. BENNETT, CHIEF  
DIVISION OF RESEARCH, W. C. LOWDERMILK, CHIEF  
N. W. APPALACHIAN DIST. STA. - ZANESVILLE, O.

STORM NO. 4 JUNE 18, 1935

Put by date checked by date  
Completions by date checked by date  
Sheet 1 of 1 Sheets

ZANESVILLE, OHIO  
JUNE 18, 1935  
SHEET 1 OF 1 SHEET





22

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|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|

$\approx$  Rainfall  $\approx 2$  ft. off in inches  
Rain-fall rate is 10 per hour

is poor for

Accumulated Demand: 100,000 units

2- page, 400

[illegible]

Discharge in second test

Neu Hild. d. d. 17. 10. 1777. Trudben. Waberschen.

Revised Waterford

Blackburn W. P. Blackbird

5th February

Product 145

| Area    | Number of Squares | Per. off in inches |
|---------|-------------------|--------------------|
| 1.00018 | 1                 | 0.00026            |
| 1.00026 | 1                 | 0.00026            |
| 1.00034 | 1                 | 0.00026            |
| 1.00042 | 1                 | 0.00026            |
| 1.00050 | 1                 | 0.00026            |
| 1.00058 | 1                 | 0.00026            |
| 1.00066 | 1                 | 0.00026            |
| 1.00074 | 1                 | 0.00026            |
| 1.00082 | 1                 | 0.00026            |
| 1.00090 | 1                 | 0.00026            |
| 1.00098 | 1                 | 0.00026            |
| 1.00106 | 1                 | 0.00026            |
| 1.00114 | 1                 | 0.00026            |
| 1.00122 | 1                 | 0.00026            |
| 1.00130 | 1                 | 0.00026            |
| 1.00138 | 1                 | 0.00026            |
| 1.00146 | 1                 | 0.00026            |
| 1.00154 | 1                 | 0.00026            |
| 1.00162 | 1                 | 0.00026            |
| 1.00170 | 1                 | 0.00026            |
| 1.00178 | 1                 | 0.00026            |
| 1.00186 | 1                 | 0.00026            |
| 1.00194 | 1                 | 0.00026            |
| 1.00202 | 1                 | 0.00026            |
| 1.00210 | 1                 | 0.00026            |
| 1.00218 | 1                 | 0.00026            |
| 1.00226 | 1                 | 0.00026            |
| 1.00234 | 1                 | 0.00026            |
| 1.00242 | 1                 | 0.00026            |
| 1.00250 | 1                 | 0.00026            |
| 1.00258 | 1                 | 0.00026            |
| 1.00266 | 1                 | 0.00026            |
| 1.00274 | 1                 | 0.00026            |
| 1.00282 | 1                 | 0.00026            |
| 1.00290 | 1                 | 0.00026            |
| 1.00298 | 1                 | 0.00026            |
| 1.00306 | 1                 | 0.00026            |
| 1.00314 | 1                 | 0.00026            |
| 1.00322 | 1                 | 0.00026            |
| 1.00330 | 1                 | 0.00026            |
| 1.00338 | 1                 | 0.00026            |
| 1.00346 | 1                 | 0.00026            |
| 1.00354 | 1                 | 0.00026            |
| 1.00362 | 1                 | 0.00026            |
| 1.00370 | 1                 | 0.00026            |
| 1.00378 | 1                 | 0.00026            |
| 1.00386 | 1                 | 0.00026            |
| 1.00394 | 1                 | 0.00026            |
| 1.00402 | 1                 | 0.00026            |
| 1.00410 | 1                 | 0.00026            |
| 1.00418 | 1                 | 0.00026            |
| 1.00426 | 1                 | 0.00026            |
| 1.00434 | 1                 | 0.00026            |
| 1.00442 | 1                 | 0.00026            |
| 1.00450 | 1                 | 0.00026            |
| 1.00458 | 1                 | 0.00026            |
| 1.00466 | 1                 | 0.00026            |
| 1.00474 | 1                 | 0.00026            |
| 1.00482 | 1                 | 0.00026            |
| 1.00490 | 1                 | 0.00026            |
| 1.00498 | 1                 | 0.00026            |
| 1.00506 | 1                 | 0.00026            |
| 1.00514 | 1                 | 0.00026            |
| 1.00522 | 1                 | 0.00026            |
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| 1.00538 | 1                 | 0.00026            |
| 1.00546 | 1                 | 0.00026            |
| 1.00554 | 1                 | 0.00026            |
| 1.00562 | 1                 | 0.00026            |
| 1.00570 | 1                 | 0.00026            |
| 1.00578 | 1                 | 0.00026            |
| 1.00586 | 1                 | 0.00026            |
| 1.00594 | 1                 | 0.00026            |
| 1.00602 | 1                 | 0.00026            |
| 1.00610 | 1                 | 0.00026            |
| 1.00618 | 1                 | 0.00026            |
| 1.00626 | 1                 | 0.00026            |
| 1.00634 | 1                 | 0.00026            |
| 1.00642 | 1                 | 0.00026            |
| 1.00650 | 1                 | 0.00026            |
| 1.00658 | 1                 | 0.00026            |
| 1.00666 | 1                 | 0.00026            |
| 1.00674 | 1                 | 0.00026            |
| 1.00682 | 1                 | 0.00026            |
| 1.00690 | 1                 | 0.00026            |
| 1.00698 | 1                 | 0.00026            |
| 1.00706 | 1                 | 0.00026            |
| 1.00714 | 1                 | 0.00026            |
| 1.00722 | 1                 | 0.00026            |
| 1.00730 | 1                 | 0.00026            |
| 1.00738 | 1                 | 0.00026            |
| 1.00746 | 1                 | 0.00026            |
| 1.00754 | 1                 | 0.00026            |
| 1.00762 | 1                 | 0.00026            |
| 1.00770 | 1                 | 0.00026            |
| 1.00778 | 1                 | 0.00026            |
| 1.00786 | 1                 | 0.00026            |
| 1.00794 | 1                 | 0.00026            |
| 1.00802 | 1                 | 0.00026            |
| 1.00810 | 1                 | 0.00026            |
| 1.00818 | 1                 | 0.00026            |
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| 4 |     |    |  |  |  |
| 5 | 200 | 25 |  |  |  |

ZANESVILLE, OHIO  
JUNE 22, 1935  
SHEET 1 OF 2 SHEETS





JUNE 22, 1935

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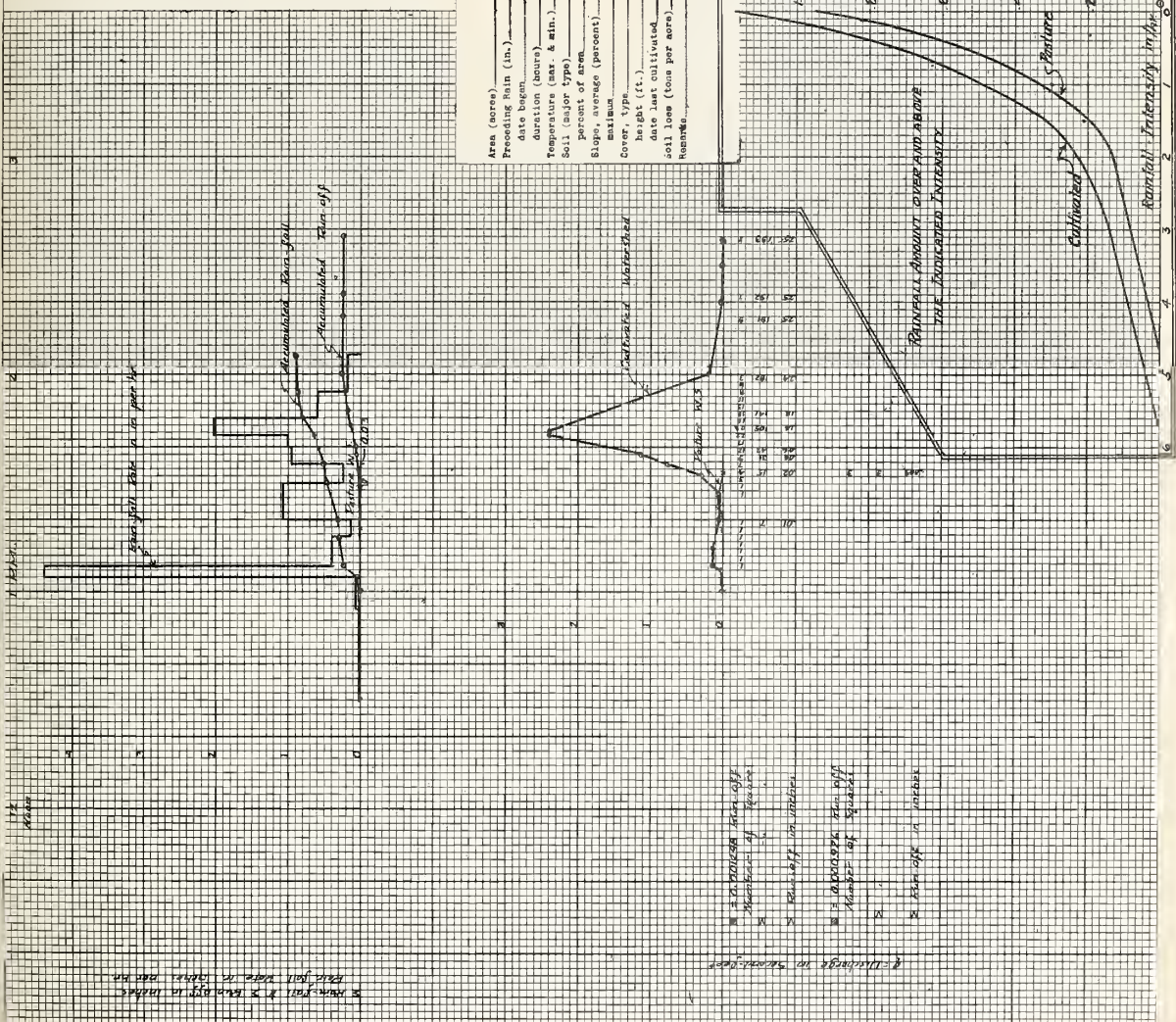
| JULY 26, 1935 |      |      |      |      |      |      |      |      |      |
|---------------|------|------|------|------|------|------|------|------|------|
| Line          | t    | d    | i    | d    | in.  | in.  | in.  | in.  | in.  |
| 1             | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
| 12-50         | 25   | 0.00 | 0.01 | 0.02 | 0.01 | 0.02 | 0.01 | 0.02 | 0.01 |
| 12-55         | 0.01 | 0.01 | 0.01 | 0.07 | 0.01 | 0.07 | 0.01 | 0.07 | 0.01 |
| 104           | 3    | 0.02 | 0.22 | 4.40 | 0.22 | 4.40 | 0.22 | 4.40 | 0.22 |
| 107           | 6    | 0.24 | 0.08 | 0.87 | 0.08 | 0.87 | 0.08 | 0.87 | 0.08 |
| 115           | 5    | 0.29 | 0.01 | 0.12 | 0.01 | 0.12 | 0.01 | 0.12 | 0.01 |
| 120           | 0    | 0.30 | 0.18 | 1.08 | 0.18 | 1.08 | 0.18 | 1.08 | 0.18 |
| 130           | 0    | 0.46 | 0.02 | 0.24 | 0.02 | 0.24 | 0.02 | 0.24 | 0.02 |
| 135           | 5    | 0.50 | 0.09 | 0.96 | 0.09 | 0.96 | 0.09 | 0.96 | 0.09 |
| 140           | 3    | 0.63 | 0.03 | 1.00 | 0.03 | 1.00 | 0.03 | 1.00 | 0.03 |
| 143           | 5    | 0.80 | 0.17 | 2.04 | 0.17 | 2.04 | 0.17 | 2.04 | 0.17 |
| 148           | 7    | 0.87 | 0.07 | 0.60 | 0.07 | 0.60 | 0.07 | 0.60 | 0.07 |
| 155           | 10   | 0.87 | 0.03 | 0.18 | 0.03 | 0.18 | 0.03 | 0.18 | 0.03 |
| 205           | 0.50 |      |      |      |      |      |      |      |      |

Cult. - interseed - Std. Dept. 1.17"  
 int. interseed A-E Std. Dept. 0.55"  
 nodes interseed (near nodes, 0.50")

| Cultivated watershed     |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|--------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Area (acres)             | 1.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 |
| Preceding rain (in.)     | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 |
| Date begun               | June 26              | June 26              | June 26              | June 26              | June 26              | June 26              | June 26              | June 26              | June 26              |
| Duration (hours)         | 3                    | 3                    | 3                    | 3                    | 3                    | 3                    | 3                    | 3                    | 3                    |
| Temperature (air & min.) | 87-86                | 87-86                | 87-86                | 87-86                | 87-86                | 87-86                | 87-86                | 87-86                | 87-86                |
| Soil (major type)        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        |
| Percent of area          | All                  | All                  | All                  | All                  | All                  | All                  | All                  | All                  | All                  |
| Slope, average (percent) | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   |
| Minimum                  | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   |
| Cover type               | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) |
| Height (ft.)             | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    |
| Date last cultivated     | 0.075                | 0.075                | 0.075                | 0.075                | 0.075                | 0.075                | 0.075                | 0.075                | 0.075                |
| Cultures (rows per acre) | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    |
| Remarks                  | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 |

| Cultivated watershed     |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|--------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Area (acres)             | 1.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 |
| Preceding rain (in.)     | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 | 0.44                 |
| Date begun               | June 26              | June 26              | June 26              | June 26              | June 26              | June 26              | June 26              | June 26              | June 26              |
| Duration (hours)         | 3                    | 3                    | 3                    | 3                    | 3                    | 3                    | 3                    | 3                    | 3                    |
| Temperature (air & min.) | 87-86                | 87-86                | 87-86                | 87-86                | 87-86                | 87-86                | 87-86                | 87-86                | 87-86                |
| Soil (major type)        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        | Augingum silt        |
| Percent of area          | All                  | All                  | All                  | All                  | All                  | All                  | All                  | All                  | All                  |
| Slope, average (percent) | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   |
| Minimum                  | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   | 14                   |
| Cover type               | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) | Low sward (regrowth) |
| Height (ft.)             | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    |
| Date last cultivated     | 0.075                | 0.075                | 0.075                | 0.075                | 0.075                | 0.075                | 0.075                | 0.075                | 0.075                |
| Cultures (rows per acre) | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    |
| Remarks                  | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 | residue was cut 7-17 |

UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 H. H. BENNETT, CHIEF  
 DIVISION OF RESEARCH, W. C. LOWGERMILK, CHIEF  
 N. W. APPALACHIAN EXPERIMENT STA. - JAMESVILLE, O.  
 STORM NO. 6 JULY 26, 1935  
 Plot by \_\_\_\_\_ date \_\_\_\_\_ checked by \_\_\_\_\_ data \_\_\_\_\_  
 Computation by \_\_\_\_\_ date \_\_\_\_\_ checked by \_\_\_\_\_ data \_\_\_\_\_  
 Sheet 1 of 1 sheet.





















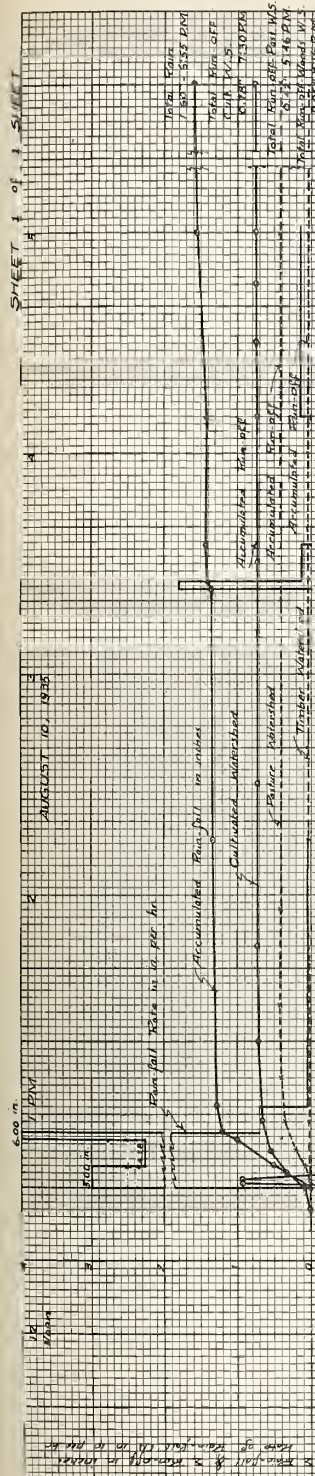




AUGUST 10, 1935

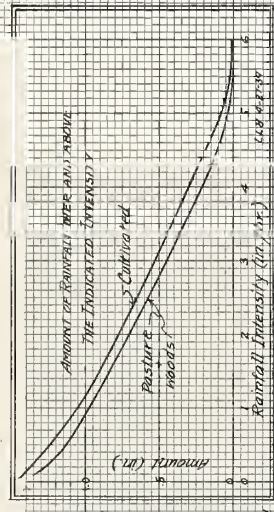
1:00 PM

Time of rain fall & amount in inches



THIS CURVE FOR HINGGINS  
Cultivated, add 9 minutes  
Pasture, add 4 minutes  
Woods, add 22 minutes

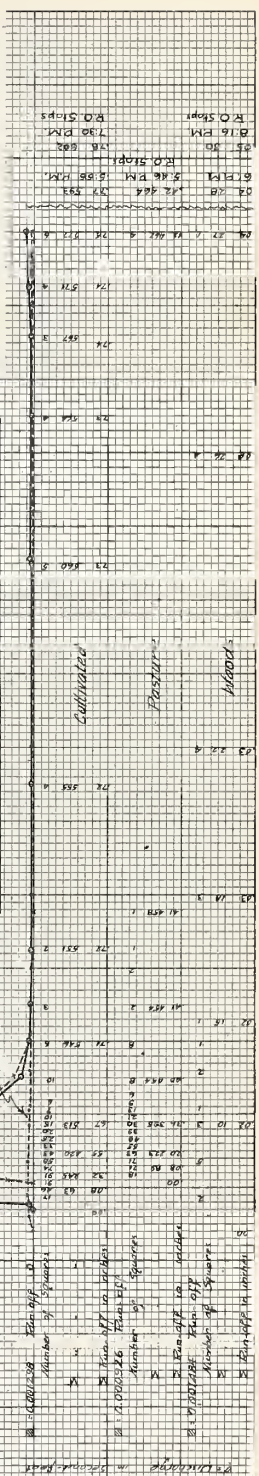
| Area (acres)                 | Cultivated watershed | Woods |
|------------------------------|----------------------|-------|
| 2.566                        | 2.566                | 2.566 |
| Preceding rain (in.)         | 2.44                 | 2.44  |
| date begun                   | 8-7                  | 8-7   |
| duration (hours)             | 9                    | 9     |
| Temperature (max. & min.)    | 86-88                | 86-88 |
| soil color (type)            | black                | black |
| 8 percent coverage (percent) | black                | black |
| Cover, type                  | black                | black |
| height (ft.)                 | 14                   | 14    |
| date last cultivated         | 18                   | 18    |
| soil loss (tons per acre)    | 1                    | 1     |
| Report                       | 0.187                | 0.00  |



| Time     | Point | Height | Area | Volume |
|----------|-------|--------|------|--------|
| 12:40 PM | 6     | 1.00   | 0.50 | 5.00   |
| 12:45    | 7     | 0.50   | 0.50 | 5.50   |
| 12:50    | 8     | 1.00   | 0.50 | 6.00   |
| 12:55    | 9     | 1.00   | 0.50 | 6.50   |
| 1:00     | 10    | 1.00   | 0.50 | 7.00   |
| 1:05     | 11    | 1.00   | 0.50 | 7.50   |
| 1:10     | 12    | 1.00   | 0.50 | 8.00   |
| 1:15     | 13    | 1.00   | 0.50 | 8.50   |
| 1:20     | 14    | 1.00   | 0.50 | 9.00   |
| 1:25     | 15    | 1.00   | 0.50 | 9.50   |
| 1:30     | 16    | 1.00   | 0.50 | 10.00  |
| 1:35     | 17    | 1.00   | 0.50 | 10.50  |
| 1:40     | 18    | 1.00   | 0.50 | 11.00  |
| 1:45     | 19    | 1.00   | 0.50 | 11.50  |
| 1:50     | 20    | 1.00   | 0.50 | 12.00  |
| 1:55     | 21    | 1.00   | 0.50 | 12.50  |
| 2:00     | 22    | 1.00   | 0.50 | 13.00  |
| 2:05     | 23    | 1.00   | 0.50 | 13.50  |
| 2:10     | 24    | 1.00   | 0.50 | 14.00  |
| 2:15     | 25    | 1.00   | 0.50 | 14.50  |
| 2:20     | 26    | 1.00   | 0.50 | 15.00  |
| 2:25     | 27    | 1.00   | 0.50 | 15.50  |
| 2:30     | 28    | 1.00   | 0.50 | 16.00  |
| 2:35     | 29    | 1.00   | 0.50 | 16.50  |
| 2:40     | 30    | 1.00   | 0.50 | 17.00  |
| 2:45     | 31    | 1.00   | 0.50 | 17.50  |
| 2:50     | 32    | 1.00   | 0.50 | 18.00  |
| 2:55     | 33    | 1.00   | 0.50 | 18.50  |
| 3:00     | 34    | 1.00   | 0.50 | 19.00  |
| 3:05     | 35    | 1.00   | 0.50 | 19.50  |
| 3:10     | 36    | 1.00   | 0.50 | 20.00  |
| 3:15     | 37    | 1.00   | 0.50 | 20.50  |
| 3:20     | 38    | 1.00   | 0.50 | 21.00  |
| 3:25     | 39    | 1.00   | 0.50 | 21.50  |
| 3:30     | 40    | 1.00   | 0.50 | 22.00  |
| 3:35     | 41    | 1.00   | 0.50 | 22.50  |
| 3:40     | 42    | 1.00   | 0.50 | 23.00  |
| 3:45     | 43    | 1.00   | 0.50 | 23.50  |
| 3:50     | 44    | 1.00   | 0.50 | 24.00  |
| 3:55     | 45    | 1.00   | 0.50 | 24.50  |
| 4:00     | 46    | 1.00   | 0.50 | 25.00  |
| 4:05     | 47    | 1.00   | 0.50 | 25.50  |
| 4:10     | 48    | 1.00   | 0.50 | 26.00  |
| 4:15     | 49    | 1.00   | 0.50 | 26.50  |
| 4:20     | 50    | 1.00   | 0.50 | 27.00  |
| 4:25     | 51    | 1.00   | 0.50 | 27.50  |
| 4:30     | 52    | 1.00   | 0.50 | 28.00  |
| 4:35     | 53    | 1.00   | 0.50 | 28.50  |
| 4:40     | 54    | 1.00   | 0.50 | 29.00  |
| 4:45     | 55    | 1.00   | 0.50 | 29.50  |
| 4:50     | 56    | 1.00   | 0.50 | 30.00  |
| 4:55     | 57    | 1.00   | 0.50 | 30.50  |
| 5:00     | 58    | 1.00   | 0.50 | 31.00  |
| 5:05     | 59    | 1.00   | 0.50 | 31.50  |
| 5:10     | 60    | 1.00   | 0.50 | 32.00  |
| 5:15     | 61    | 1.00   | 0.50 | 32.50  |
| 5:20     | 62    | 1.00   | 0.50 | 33.00  |
| 5:25     | 63    | 1.00   | 0.50 | 33.50  |
| 5:30     | 64    | 1.00   | 0.50 | 34.00  |
| 5:35     | 65    | 1.00   | 0.50 | 34.50  |
| 5:40     | 66    | 1.00   | 0.50 | 35.00  |
| 5:45     | 67    | 1.00   | 0.50 | 35.50  |
| 5:50     | 68    | 1.00   | 0.50 | 36.00  |
| 5:55     | 69    | 1.00   | 0.50 | 36.50  |
| 6:00     | 70    | 1.00   | 0.50 | 37.00  |
| 6:05     | 71    | 1.00   | 0.50 | 37.50  |
| 6:10     | 72    | 1.00   | 0.50 | 38.00  |
| 6:15     | 73    | 1.00   | 0.50 | 38.50  |
| 6:20     | 74    | 1.00   | 0.50 | 39.00  |
| 6:25     | 75    | 1.00   | 0.50 | 39.50  |
| 6:30     | 76    | 1.00   | 0.50 | 40.00  |
| 6:35     | 77    | 1.00   | 0.50 | 40.50  |
| 6:40     | 78    | 1.00   | 0.50 | 41.00  |
| 6:45     | 79    | 1.00   | 0.50 | 41.50  |
| 6:50     | 80    | 1.00   | 0.50 | 42.00  |
| 6:55     | 81    | 1.00   | 0.50 | 42.50  |
| 7:00     | 82    | 1.00   | 0.50 | 43.00  |
| 7:05     | 83    | 1.00   | 0.50 | 43.50  |
| 7:10     | 84    | 1.00   | 0.50 | 44.00  |
| 7:15     | 85    | 1.00   | 0.50 | 44.50  |
| 7:20     | 86    | 1.00   | 0.50 | 45.00  |
| 7:25     | 87    | 1.00   | 0.50 | 45.50  |
| 7:30     | 88    | 1.00   | 0.50 | 46.00  |
| 7:35     | 89    | 1.00   | 0.50 | 46.50  |
| 7:40     | 90    | 1.00   | 0.50 | 47.00  |
| 7:45     | 91    | 1.00   | 0.50 | 47.50  |
| 7:50     | 92    | 1.00   | 0.50 | 48.00  |
| 7:55     | 93    | 1.00   | 0.50 | 48.50  |
| 8:00     | 94    | 1.00   | 0.50 | 49.00  |
| 8:05     | 95    | 1.00   | 0.50 | 49.50  |
| 8:10     | 96    | 1.00   | 0.50 | 50.00  |
| 8:15     | 97    | 1.00   | 0.50 | 50.50  |
| 8:20     | 98    | 1.00   | 0.50 | 51.00  |
| 8:25     | 99    | 1.00   | 0.50 | 51.50  |
| 8:30     | 100   | 1.00   | 0.50 | 52.00  |

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
H. BENNETT, CHIEF  
DIVISION OF RESEARCH, W. C. LOWDERMILK, CHIEF  
H. W. APPALACHIAN EX. STA. - ZAR-VILLE, O.

STORM NO. 9 AUG. 10, 1935  
Plot by \_\_\_\_\_ date \_\_\_\_\_ checked by \_\_\_\_\_ date \_\_\_\_\_  
Computation by \_\_\_\_\_ checked by \_\_\_\_\_ date \_\_\_\_\_  
Sheet 1 of 1 sheets













SEPT 21 1925

1. MAY

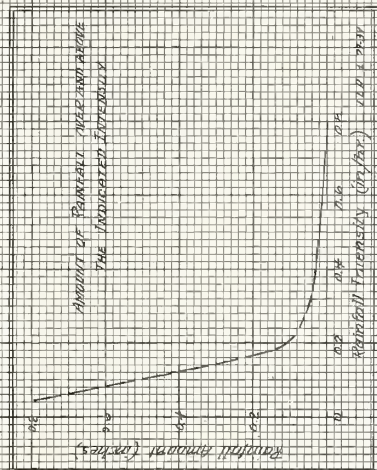
Rate of Rainfall in in. per hr.

Rate of Rainfall in in. per hr.

Accumulated Rainfall

Accumulated Rainfall

Rate of Rainfall in in. per hr.



1.000000 in. per hr.  
Number of Inches  
1.000000 in. per hr.

1.000000 in. per hr.





|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|

Not by \_\_\_\_\_ date \_\_\_\_\_ checked by \_\_\_\_\_ date \_\_\_\_\_  
 computations by \_\_\_\_\_ date \_\_\_\_\_ checked by \_\_\_\_\_ date \_\_\_\_\_  
 Sheet 2 of 2 sheets



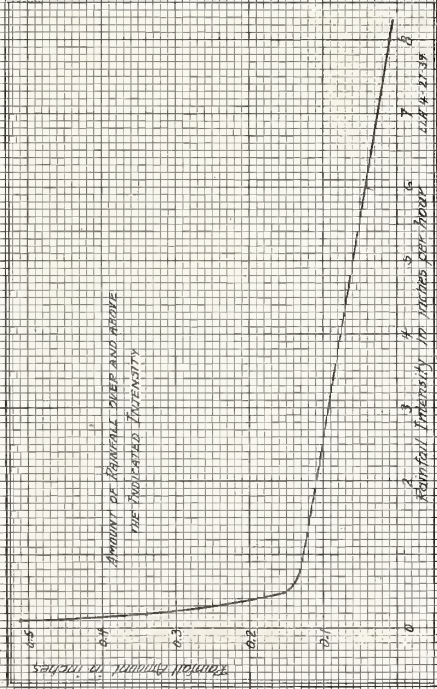
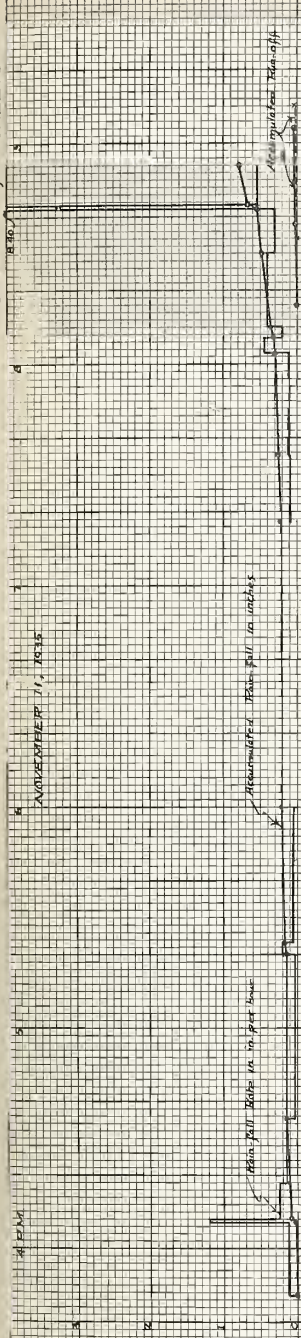


NOVEMBER 11, 1935

5 Rainfall rate in inches per hour

4 Rainfall rate in inches per hour

3 Rainfall rate in inches per hour



2 Discharge in second foot

1 Discharge in second foot

0.00258 Run-off  
Number of squares

0.00258 Run-off  
Number of squares

Run-off in inches

Run-off





NOVEMBER 11, 1935

Midnight

9 PM

Rainfall & Run-off in inches

Accumulated Run-off

Rainfall & Run-off in inches

Accumulated Run-off

|                           |                         |                         |
|---------------------------|-------------------------|-------------------------|
| Area (acres)              | 2.546                   | Feet. No.               |
| Preceding Rain (in.)      | 0.10                    | 3.06                    |
| Date begun                | 11-10                   | 0.10                    |
| Duration (hours)          | 1                       | 11-10                   |
| Temperature (max. & min.) | 63-59                   | 1                       |
| Soil (major type)         | Massachusetts silt      | Massachusetts silt      |
| percent of area           | All                     | All                     |
| Slope, average (percent)  | 14                      | 14                      |
| Cover, type               | Blue Grass              | Blue Grass              |
| height (ft.)              | 10 (mature)             | 8" (perennial)          |
| date last cultivated      | 0.003                   | 0.003                   |
| Soil loss (ton per acre)  | Clear 1 Timothy Meadow  | Clear 1 Timothy Meadow  |
| Remarks                   | Sown to Wheat Apr. 1934 | Sown to Wheat Apr. 1934 |

Discharge in second feet

Number of squares

Run-off in inches

Number of squares

Run-off in inches

Discharge in second feet

No Run-off on Woods Watershed

| Time (hr.) | Δt (min) | Δt (hr.) | Δt (min) | Δt (hr.) | Δt (min) |
|------------|----------|----------|----------|----------|----------|
| 3:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 9:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 10:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 11:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:01      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:21      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 12:41      | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 1:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 2:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 3:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 4:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 5:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 6:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:21       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 7:41       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:01       | 20       | 0.33     | 0.04     | 0.04     | 0.04     |
| 8:21       | 20       | 0.33     | 0.04     | 0.04     | 0.0      |









UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

1936

MONTH \_\_\_\_\_, 1936

SHEET 1 OF 7 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

PROJECT Zanesville, Ohio

U. S. GOVERNMENT PRINTING OFFICE 8-12368

| U. S. GOVERNMENT PRINTING OFFICE 8-12598 |                                     |                 |              |                 |                       |                    |                                |                                 |                                 |          |         |                 |                 |                    |                            |                              |                          |              |                                |     |
|--|-------------------------------------|-----------------|--------------|-----------------|-----------------------|--------------------|--------------------------------|---------------------------------|---------------------------------|----------|---------|-----------------|-----------------|--------------------|----------------------------|------------------------------|--------------------------|--------------|--------------------------------|-----|
| DATE                                     | WATERSHED                           |                 | RAINFALL     |                 |                       |                    |                                |                                 | TEMPERATURE<br>(degrees F.)     |          | RUN-OFF |                 |                 |                    | RAINFALL MINUS<br>(inches) | Soil Loss<br>(tons per acre) | CONDITION OF WATERBODIES |              |                                |     |
|  | Number                              | Area<br>(acres) | Gage No.     | Begin<br>(hour) | Duration<br>(minutes) | Amount<br>(inches) | MAXIMUM INTENSITY              |                                 |                                 | Maximum  | Minimum | Began<br>(hour) | Ended<br>(hour) | Amount<br>(inches) |                            |                              |                          | MAXIMUM RATE |                                |     |
|  |                                     |                 |              |                 |                       |                    | 4 minutes<br>(inches per hour) | 15 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) |          |         |                 |                 |                    |                            |                              |                          | Cu. ft. sec. | Time                           |     |
|  |                                     |                 |              |                 |                       |                    |                                |                                 |                                 |          |         |                 |                 |                    |                            |                              |                          |              |                                | (8) |
| (1)                                      | (2)                                 | (3)             | (4)          | (5)             | (6)                   | (7)                | (8)                            | (9)                             | (10)                            | (11)     | (12)    | (13)            | (14)            | (15)               | (16)                       | (17)                         | (18)                     |              |                                |     |
|  |                                     |                 |              |                 |                       |                    |                                |                                 |                                 | JANUARY  |         |                 |                 |                    |                            |                              |                          |              |                                |     |
| Jan. 2                                   | Cult.<br>Past.<br>Woods             |                 | A. E. Rec.   | 7AM             | 11 hr.                | 0.10               | 0.04                           | 0.04                            | 0.04                            | 30       | 20      | 3PM             | 7:17A           | 0.09               | 0.03                       | 4:35A                        | 0.01                     | 0.004        | Old meadow cover-ground frozen |     |
|  |                                     |                 | "            | "               | "                     | "                  | "                              | "                               | "                               |          |         | 3:45P           | 5:45A           | 0.01               |                            |                              | 0.09                     | "            | Blue grass                     |     |
|  |                                     |                 | "            | "               | "                     | "                  | "                              | "                               | "                               |          |         |                 |                 | T                  |                            |                              | 0.10                     | T            | Second growth mixed hardwood   |     |
| Jan. 4-6                                 | Cult.<br>Past.<br>Woods             |                 | "            | Jan. 4<br>2PM   | 47 hr.                | 0.40               | 0.24                           | 0.24                            | 0.12                            | 35       | 28      |                 |                 | 0.08               |                            |                              |                          | T            | Good stand--good ground mulch  |     |
|  |                                     |                 | "            | "               | "                     | "                  | Rain & Snow                    |                                 |                                 |          |         |                 | No Runoff       | "                  |                            |                              |                          | 0.000        | & litter                       |     |
|  |                                     |                 | "            | "               | "                     | "                  | "                              | "                               | "                               |          |         |                 |                 | "                  |                            |                              |                          | 0.000        |                                |     |
| Jan. 8-9                                 | Cult.<br>Past.<br>Woods             |                 | "            | Jan. 8<br>4PM   | 34 hr.                | 0.42               | 0.20                           | 0.16                            | 0.12                            | 38       | 30      | 1-8<br>4:35P    | 1-9<br>12:50P   | 0.10               | 0.08                       | 6:55A                        | 0.32                     | 0.001        | Ground frozen                  |     |
|  |                                     |                 | "            | "               | "                     | "                  | "                              | "                               | "                               |          |         | 3:05A           |                 | 0.01               |                            |                              | 0.41                     | T            | Blue grass cover, good         |     |
|  |                                     |                 | "            | "               | "                     | "                  | "                              | "                               | "                               |          |         |                 |                 | T                  |                            |                              | 0.42                     | 0.000        |                                |     |
| Jan. 11                                  |                                     |                 | "            | "               |                       | 0.04               |                                |                                 |                                 | 38       | 26      |                 | No Runoff       |                    |                            |                              |                          |              |                                |     |
| Jan. 16                                  |                                     | Snow            | G. & S. Rec. | 1PM             | 210                   | 0.28               | 0.24                           | 0.20                            | 0.16                            | 44       | 25      |                 | No Runoff       |                    |                            |                              |                          |              |                                |     |
| Jan. 17                                  |                                     | Snow            | "            | 2:10A           | 30                    | 0.05               | 0.15                           | 0.15                            | 0.10                            | 28       | 20      |                 | No Runoff       |                    |                            |                              |                          |              |                                |     |
| Jan. 18                                  | Cult.<br>Past.<br>Woods             |                 | "            | 2:10A           | 60                    | 0.11               | 0.24                           | 0.20                            | 0.14                            | 41       | 21      | 6:10AM          | 3:24P           | 0.10               | 0.03                       | 11:08A                       | 0.34                     | 0.001        | "                              |     |
|  |                                     |                 | "            | "               | "                     | 0.44               | "                              | "                               | "                               |          |         |                 |                 | 0.01               |                            |                              | 0.43                     | T            | "                              |     |
|  |                                     |                 | "            | "               | "                     | 0.44               | "                              | "                               | "                               |          |         |                 |                 | 0.02               |                            |                              | 0.42                     | T            | "                              |     |
| Jan. 19                                  |                                     | Snow            | "            | 12PM            | 10 hr.                | 0.28               | 0.12                           | 0.12                            | 0.12                            | 42       | 18      |                 | No Runoff       |                    |                            |                              |                          |              |                                |     |
| Jan. 22                                  |                                     | "               | A. E. Rec.   |                 |                       | 0.04               |                                |                                 |                                 | 30       | 5       |                 | "               | "                  |                            |                              |                          |              |                                |     |
|  |                                     |                 |              |                 |                       |                    |                                |                                 |                                 | FEBRUARY |         |                 |                 |                    |                            |                              |                          |              |                                |     |
| Feb. 4                                   | Cult.<br>Past.<br>Woods             |                 | A. E. Rec.   | 2AM             | 240                   | 0.18               | 0.24                           | 0.12                            | 0.08                            | 43       | 22      |                 |                 | 0.02               |                            |                              | 0.16                     | T            | "                              |     |
|  |                                     |                 | "            | "               | "                     | "                  | "                              | "                               | "                               |          |         |                 | No Runoff       | 0.01               |                            |                              | 0.17                     | T            | "                              |     |
|  |                                     |                 | "            | "               | "                     | "                  | "                              | "                               | "                               |          |         |                 | No Runoff       | No Runoff          |                            |                              |                          |              |                                |     |
| Feb. 7                                   |                                     | Snow            | "            |                 |                       | 0.04               |                                |                                 |                                 | 24       | 3       |                 | No Runoff       |                    |                            |                              |                          |              |                                |     |
| Feb. 13-14                               | Cult. Snow & Rain<br>Past.<br>Woods |                 | "            | 2-13<br>12:30A  | 25 Hr.                | 1.48               | 0.15                           | 0.12                            | 0.10                            | 30       | 7       |                 |                 | 0.14               |                            |                              | 1.34                     | 0.002        | "                              |     |
|  |                                     |                 | "            | "               | "                     | "                  | "                              | "                               | "                               |          |         |                 |                 | 0.03               |                            |                              | 1.45                     | T            |                                |     |
|  |                                     |                 | "            | "               | "                     | "                  | "                              | "                               | "                               |          |         |                 |                 | T                  |                            |                              | 1.48                     | 0.000        | "                              |     |
| Feb. 14                                  |                                     | Snow            |              |                 |                       | 0.04               |                                |                                 |                                 | 40       | 29      |                 | No Runoff       |                    |                            |                              |                          |              | "                              |     |
| Feb. 17                                  |                                     | Snow            |              |                 |                       | 0.18               |                                |                                 |                                 | 21       | 16      |                 | No Runoff       |                    |                            |                              |                          |              |                                |     |
| Feb. 25-26                               |                                     |                 | "            | 2-25<br>8PM     | 480                   | 0.28               | 0.24                           | 0.20                            | 0.16                            | 53       | 42      |                 |                 |                    |                            |                              |                          |              |                                |     |





UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
DIVISION OF RESEARCHMONTH 1936  
SHEET 2 OF 7 SHEETSPROJECT Zanesville, Ohio RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

U.S. GOVERNMENT PRINTING OFFICE 8-12383

| DATE    | WATERSHED               |                 | RAINFALL            |                 |                       |                      |                                | TEMPERATURE<br>(degrees F.)     |                                 | RUN-OFF                            |         |                        |                           |                         | RAINFALL MEANS<br>RUN-OFF<br>(inches) | SOIL LOSS<br>(tons per acre) | CONDITION OF WATERSHED     |              |      |
|---------|-------------------------|-----------------|---------------------|-----------------|-----------------------|----------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------------|---------|------------------------|---------------------------|-------------------------|---------------------------------------|------------------------------|----------------------------|--------------|------|
|         | Number                  | Area<br>(acres) | Gage No.            | Began<br>(hour) | Duration<br>(minutes) | Amount<br>(inches)   | MAXIMUM INTENSITY              |                                 |                                 | Maximum                            | Minimum | Began<br>(hour)        | Ended<br>(hour)           | Amount<br>(cubic feet)  |                                       |                              |                            | MAXIMUM RATE |      |
|         |                         |                 |                     |                 |                       |                      | 5 minutes<br>(inches per hour) | 15 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) |                                    |         |                        |                           |                         |                                       |                              |                            | Cu. ft. sec. | Time |
| (1)     | (2)                     | (3)             | (4)                 | (5)             | (6)                   | (7)                  | (8)                            | (9)                             | (10)                            | (11)                               | (12)    | (13)                   | (14)                      | (15)                    | (16)                                  | (17)                         | (18)                       | (19)         |      |
| Feb. 26 | Cult.<br>Past.<br>Woods |                 | A. E. Rec.<br>" " " | 2-26<br>6PM     | 210<br>" "            | 0.11<br>0.42<br>0.42 | 0.08<br>" "                    | 0.08<br>" "                     | 0.08<br>" "                     | 60                                 | 37      | 0.14<br>0.52<br>0.06   | 0.14<br>0.52<br>0.06      | 0.02<br>0.10<br>0.36    |                                       | 0.010<br>0.005<br>T          | Ground Frozen              |              |      |
| Mar. 2  | Cult.<br>Past.<br>Woods |                 | A. E. Rec.<br>" " " | 210<br>" "      | 210<br>" "            | 0.22<br>" "          | 0.14<br>" "                    | 0.14<br>" "                     | 0.14<br>" "                     | 38                                 | 18      | T<br>0.01<br>No Runoff | 0.22<br>0.21<br>No Runoff | 0.02<br>0.21            |                                       | T<br>T                       | Blue grass cover good      |              |      |
| Mar. 9  |                         |                 | "                   | 6AM             | 200                   | 0.08                 |                                |                                 |                                 | 55                                 | 35      | No Runoff              |                           |                         |                                       |                              |                            |              |      |
| Mar. 14 |                         |                 | "                   |                 |                       | 0.08                 |                                |                                 |                                 | 32                                 | 22      |                        |                           |                         |                                       |                              |                            |              |      |
| Mar. 15 |                         |                 | "                   | 11PM            | 22Hr.                 | 0.76                 | 0.60                           | 0.32                            | 0.20                            | 60                                 | 25      |                        |                           |                         |                                       |                              |                            |              |      |
| Mar. 18 | Snow                    |                 | "                   | 9:30P           | 120                   | 0.36                 | 0.48                           | 0.32                            | 0.26                            | 41                                 | 25      |                        |                           |                         |                                       |                              |                            |              |      |
| 3-20-21 | "                       |                 | "                   |                 |                       | 0.04                 |                                |                                 |                                 | 52                                 | 26      |                        |                           |                         |                                       |                              |                            |              |      |
| 3-23-24 | Cult.<br>Past.<br>Woods |                 | "                   | 3-24<br>1AM     | 210<br>" "            | 0.32<br>1.56<br>1.56 | 0.24<br>" "                    | 0.24<br>" "                     | 0.16<br>" "                     | Std. Gage 1.08<br>" 2.05<br>" 1.78 |         | 0.45<br>0.99<br>0.02   | 1.53<br>1.06<br>1.76      |                         | 0.008<br>0.038<br>T                   |                              |                            |              |      |
| 3-27    | Cult.<br>Past.<br>Woods |                 | "                   | 3-26<br>11:50P  | 210<br>" "            | 0.54<br>" "          | 0.60<br>" "                    | 0.40<br>" "                     | 0.32<br>" "                     | 59                                 | 38      | 0.09<br>0.19<br>0.04   | 0.45<br>0.35<br>0.50      |                         | 0.007<br>0.004<br>T                   | Thawing                      |                            |              |      |
| 3-29    |                         |                 | "                   |                 |                       | 0.04                 | "                              | "                               | "                               | 63                                 | 39      |                        |                           |                         |                                       |                              |                            |              |      |
| 3-30-31 | Cult.<br>Past.<br>Woods |                 | "                   | 9PM             | 200<br>" "            | 0.12<br>" "          | 0.60<br>" "                    | 0.24<br>" "                     | 0.12<br>" "                     | 74                                 | 43      | No Runoff<br>" "       |                           |                         |                                       |                              |                            |              |      |
| Apr. 1  |                         |                 | "                   | 1:15P           | 120                   | 0.14                 | 0.10                           | 0.16                            | 0.10                            | 42                                 | 30      | No Runoff              |                           |                         |                                       |                              | Soil Moist - Grass 2" high |              |      |
| 4-2     | Cult.<br>Past.<br>Woods |                 | "                   | 12:05A          | 205<br>" "            | 0.98<br>0.56<br>0.24 | 1.92<br>" "                    | 0.96<br>" "                     | 0.64<br>" "                     | 45                                 | 32      | 0.44<br>0.49<br>0.01   | 1.50<br>1.60<br>0.02      | 2:18A<br>2:22A<br>2:30A | 0.51<br>0.17<br>0.93                  | 0.058<br>" "<br>" "          | Soil Moist                 |              |      |



[illegible]





## PROJECT Zanesville, Ohio

U. S. GOVERNMENT PRINTING OFFICE 8-12383

| DATE      | WATERSHED               |                 | RAINFALL    |                 |                       |                      |                                |                                 |                                 | TEMPERATURES<br>(degrees F.) |         | Run-off                               |                 |                                |                               | RUNOFF MINUTES<br>RUNOFF<br>(addns) | SITE LOSS<br>(cords per acre) | CONDITION OF WATERSHED   |      |
|-----------|-------------------------|-----------------|-------------|-----------------|-----------------------|----------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|---------|---------------------------------------|-----------------|--------------------------------|-------------------------------|-------------------------------------|-------------------------------|--|------|
|           | Number                  | Area<br>(acres) | Gage No.    | Began<br>(hour) | Duration<br>(minutes) | Amount<br>(inches)   | MAXIMUM INTEREST               |                                 |                                 | Maximum                      | Minimum | Began<br>(hour)                       | Ended<br>(hour) | Amount<br>(inches)             | MAXIMUM RATE                  |                                     |                               |  |      |
|           |                         |                 |             |                 |                       |                      | 4 minutes<br>(inches per hour) | 18 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) |                              |         |                                       |                 |                                | Cu. ft. sec.                  |                                     |                               |  | Time |
| (1)       | (2)                     | (3)             | (4)         | (5)             | (6)                   | (7)                  | (8)                            | (9)                             | (10)                            | (11)                         |         | (12)                                  | (13)            | (14)                           | (15)                          | (16)                                | (18)                          |  |      |
| June 7    |                         |                 | A.E.Reo.    | 3:40A           | 300                   | 0.57                 | 0.72                           | 0.48                            | 0.30                            | JUNE                         | 92      | 60                                    |                 | No Runoff                      | No Runoff                     |                                     |                               | Blue grass 5" high P.W.S.  |      |
| 6-11      |                         |                 | "           | 10:04A          | 55                    | 0.25                 | 1.80                           | 0.80                            | 0.16                            |                              |         |                                       | No Runoff       | No Runoff                      |                               |                                     |                               | Corn 10" high--Soil dry  |      |
| 6-18      |                         |                 | A.E.Std.    |                 |                       | 0.05                 |                                |                                 |                                 | 96                           | 53      |                                       | No Runoff       | No Runoff                      |                               |                                     |                               | Sheep grazing started<br>on pasture W. S.<br>June 24   |      |
| 6-23      |                         |                 | A.E.Rec.    | 5PM             | 60                    | 0.42                 | 0.36                           | 0.36                            | 0.20                            | 74                           | 46      |                                       | No Runoff       | No Runoff                      |                               |                                     |                               | Past. W. S. grass 6" high  |      |
| 6-27      |                         |                 | A.E.Std.    |                 |                       | 0.05                 |                                |                                 |                                 | 93                           | 66      |                                       | No Runoff       | No Runoff                      |                               |                                     |                               | Corn 20" high--Soil dry  |      |
| 6-30      | First Rain              |                 | "           | 12:04A          | 30                    | 0.17                 | 0.48                           | 0.40                            | 0.26                            | 90                           | 51      |                                       | No Runoff       | No Runoff                      |                               |                                     |                               | 2'-2.10" p.h., 3'a5.20"p.h.5'A<br>2' at 7.80, 3' at 10.60p.h. 9.56<br>T 100 yr. or more rain for 10' |      |
| 6-30      | Second Rain             |                 | "           | 10:00A          | 10                    | 0.05                 |                                |                                 |                                 | JULY                         |         |                                       | No Runoff       | No Runoff                      |                               |                                     |                               |  |      |
| July 4    | First Rain              |                 | A.E.Reo.    | 12:50P          | 35                    | 0.33                 | 1.92                           | 1.08                            | 0.64                            | 88                           | 65      |                                       |                 |                                |                               |                                     |                               |  |      |
| * 7-4     | Cult.<br>Past.<br>Woods |                 | "<br>"<br>" | 6:40P<br>"<br>" | 20<br>"<br>"          | 1.74<br>1.90<br>1.87 | 9.36<br>"<br>"                 | 7.60<br>"<br>"                  | 3.90<br>"<br>"                  |                              |         | 6:45F 7:30P<br>6:47F 7:20P            |                 | (1.30)<br>0.27<br>0.01         | 30 app. 6:55app.<br>5.55 6.51 | 0.77<br>1.96<br>2.19                | 41.63<br>-018<br>T            |  |      |
| 7-11      |                         |                 | A.E.Std.    |                 |                       | 0.04                 |                                |                                 |                                 | 102                          | 68      |                                       | No Runoff       | No Runoff                      |                               |                                     |                               |  |      |
| 7-14      |                         |                 | A.E.Rec.    | 10:17P          | 110                   | 0.24                 | 1.68                           | 0.56                            | 0.28                            | 96                           | 74      |                                       | No Runoff       | No Runoff                      |                               |                                     |                               |  |      |
| * 7-23    | Cult.<br>Past.<br>Woods |                 | "<br>"<br>" | 1:10P<br>"<br>" | 105<br>"<br>"         | 0.94<br>1.03<br>0.93 | 3.90<br>"<br>"                 | 2.39<br>"<br>"                  | 1.52<br>"<br>"                  | 90                           | 63      | 2:27F 3:11P<br>No Runoff<br>No Runoff |                 | 0.16<br>No Runoff<br>No Runoff | 2.90 2:37P                    | 0.78                                | 2.55                          | Corn 55" high<br>Grazed to variable height<br>average about 4"                                       |      |
| 7-23      |                         |                 | "           | 10:15P          | 90                    | 0.14                 | 0.16                           | 0.16                            | 0.14                            |                              |         | No Runoff                             | No Runoff       | No Runoff                      |                               |                                     |                               |  |      |
| * 7-27-28 | Cult.<br>Past.<br>Woods |                 | "<br>"<br>" | 6PM<br>"<br>"   | 150<br>"<br>"         | 2.34<br>"<br>"       | 2.40<br>"<br>"                 | 2.00<br>"<br>"                  | 1.88<br>"<br>"                  | 98                           | 70      | 7:19F 4:15A<br>7:56F 8:55P            |                 | 0.99<br>0.03<br>No Runoff      | 4.40 8:01P<br>0.28 8:10P      | 1.35<br>2.31                        | 6.163<br>T                    | July 31 --Corn 60" high  |      |



UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH 19  
 SHEET 5 OF 7 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

 PROJECT Zanesville, Ohio

S. C. 8-345 (REVISED 1-1-36)

| DATE    | WATERSHED   |              |           | RAINFALL     |                    |                 |                             | TEMPERATURE (degrees F.)     |                              |         |         | RUN-OFF      |              |                 |              | RAINFALL MONITOR RUN-OFF (inches) | SILT LOSS (tons per acre) | CONDITION OF WATERSHED         |      |
|---------|-------------|--------------|-----------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|---------|---------|--------------|--------------|-----------------|--------------|-----------------------------------|---------------------------|--------------------------------|------|
|         | Number      | Area (acres) | Gage No.  | Begin (hour) | Duration (minutes) | Amount (inches) | MAXIMUM INTENSITY           |                              |                              | Maximum | Minimum | Began (hour) | Ended (hour) | Amount (inches) | MAXIMUM RATE |                                   |                           |                                |      |
|         |             |              |           |              |                    |                 | 8 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |         |         |              |              |                 | On ft. sec.  |                                   |                           |                                | Time |
| (1)     | (2)         | (3)          | (4)       | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)    | (12)    | (13)         | (14)         | (15)            | (16)         | (17)                              | (18)                      | (19)                           |      |
|         |             |              |           |              |                    |                 |                             |                              |                              |         |         |              |              |                 |              |                                   |                           |                                |      |
| Aug-3   |             |              | A.E. Std. | 6:45P        | 15                 | 0.15            | 0.72                        | 0.44                         | 0.22                         | 92      | 70      |              | No Runoff    |                 |              |                                   |                           |                                |      |
| 8-4     | First Rain  |              | "         |              |                    | 0.05            |                             |                              |                              | 90      | 68      |              | No Runoff    |                 |              |                                   |                           | Soil dry & hard--Corn 60" high |      |
| 8-4     | Second Rain |              | "         |              |                    | 0.105           |                             |                              |                              |         |         |              |              |                 |              |                                   |                           |                                |      |
| 8-6     | Cult.       |              | A.E. Rec. | 11:45P       | 450                | 0.75            | 0.96                        | 0.76                         | 0.60                         | 85      | 62      | 1:40A        | 10:24A       | 0.27            | 1.58         | 4:29A                             | 0.48                      | 0.706                          |      |
|         | Past.       |              | "         |              |                    | "               | "                           | "                            | "                            |         |         |              | No Runoff    |                 |              |                                   |                           |                                |      |
|         | Woods       |              | "         |              |                    | "               | "                           | "                            | "                            |         |         |              | No Runoff    |                 |              |                                   |                           |                                |      |
| 8-15    |             |              | "         | 8:45A        | 120                | 0.16            | 0.48                        | 0.32                         | 0.24                         | 78      | 69      |              | No Runoff    |                 |              |                                   |                           | Corn 65" high                  |      |
| 8-19    |             |              | "         | 4:55P        | 20                 | 0.14            | 0.96                        | 0.48                         | 0.28                         | 80      | 56      |              | No Runoff    |                 |              |                                   |                           |                                |      |
| 8-20    | Cult.       |              | "         | 5:02A        | 75                 | 0.64            | 2.16                        | 2.08                         | 1.24                         | 94      | 51      | 5:05A        | 6:04A        | 0.23            | 2.82         | 5:15A                             | 0.41                      | 1.048                          |      |
|         | Past.       |              | "         |              |                    | "               | "                           | "                            | "                            |         |         |              | No Runoff    |                 |              |                                   |                           |                                |      |
|         | Woods       |              | "         |              |                    | "               | "                           | "                            | "                            |         |         |              | No Runoff    |                 |              |                                   |                           |                                |      |
| 8-24    |             |              | A.E. Std. |              |                    | 0.05            |                             |                              |                              | 94      | 69      |              | No Runoff    |                 |              |                                   |                           | Corn 70" high                  |      |
| 8-25    |             |              | "         |              |                    | 0.03            |                             |                              |                              | 93      | 68      |              | No Runoff    |                 |              |                                   |                           |                                |      |
| 8-25    | Cult.       |              | A.E. Rec. | 5:10P        | 69                 | 0.97            | 3.17                        | 2.24                         | 1.60                         | 93      | 68      | 5:11P        | 9:53P        | 0.43            | 5.12         | 5:22P                             | 0.51                      | 1.525                          |      |
|         | Past.       |              | "         |              |                    | 0.86            | "                           | "                            | "                            |         |         |              | No Runoff    |                 |              |                                   |                           | Grass 4" high average.         |      |
|         | Woods       |              | "         |              |                    | 0.85            | "                           | "                            | "                            |         |         |              | No Runoff    |                 |              |                                   |                           | height variable due to grazing |      |
| 8-25    |             |              | A.E. Std. | 9:05P        | 20                 | 0.09            | 0.24                        | 0.16                         | 0.10                         |         |         |              | No Runoff    |                 |              |                                   |                           |                                |      |
| 8-28    |             |              | A.E. Rec. | 9:35A        | 5                  | 0.06            |                             |                              |                              | 85      | 64      |              | No Runoff    |                 |              |                                   |                           |                                |      |
| 8-28-29 | Cult.       |              | "         | 10:13P       | 617                | 1.56            | 4.32                        | 2.36                         | 1.56                         | 86      | 53      | 10:21P       | 6:15A        | 0.63            | 5.65         | 10:30P                            | 0.93                      | 1.975                          |      |
|         | Past.       |              | "         |              |                    | 1.50            | "                           | "                            | "                            |         |         |              | No Runoff    |                 |              |                                   |                           |                                |      |
|         | Woods       |              | "         |              |                    | 1.55            | "                           | "                            | "                            |         |         |              | No Runoff    |                 |              |                                   |                           |                                |      |
|         |             |              |           |              |                    |                 |                             |                              |                              |         |         |              | No Runoff    |                 |              |                                   |                           |                                |      |
|         |             |              |           |              |                    |                 |                             |                              |                              |         |         |              | No Runoff    |                 |              |                                   |                           |                                |      |
| Sept. 2 |             |              | "         | 8AM          | 17 hr.             | 0.20            | 0.20                        | 0.16                         | 0.10                         | 83      | 64      |              | No Runoff    |                 |              |                                   |                           | Corn 70" high                  |      |
| 9-13    |             |              | A.E. Std. |              |                    | 0.03            |                             |                              |                              | 87      | 68      |              | No Runoff    |                 |              |                                   |                           |                                |      |
| 9-21    |             |              | "         |              |                    | 0.05            |                             |                              |                              | 83      | 59      |              | No Runoff    |                 |              |                                   |                           |                                |      |
| 9-24    |             |              | A.E. Rec. | 4:15A        | 255                | 0.18            | 0.24                        | 0.24                         | 0.14                         | 92      | 56      |              | No Runoff    |                 |              |                                   |                           | Corn out.                      |      |





UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH June, 19 36  
 SHEET 6 OF 7 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

 PROJECT Zanesville, Ohio

S. C. DEPARTMENT PRINTING OFFICE 8-12388

| U. S. GOVERNMENT PRINTING OFFICE: 8-12538 |                   |              |           |                    |                    |                 |                             |                              |                              |         |         |              |              |                 |                                  |                           |  |              |      |
|---|-------------------|--------------|-----------|--------------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|---------|---------|--------------|--------------|-----------------|----------------------------------|---------------------------|--|--------------|------|
| DATE                                      | WATERSHED         |              | Gage No.  | Begin (hour)       | Duration (minutes) | RAINFALL        |                             |                              | TEMPERATURE (degrees F.)     |         |         | RUN-OFF      |              |                 | RAINFALL MINUTE RUN-OFF (inches) | Soil Loss (tons per acre) | CONDITION OF WATERSHED                               |              |      |
|   | Number            | Area (acres) |           |                    |                    | Amount (inches) | MAXIMUM INTENSITY           |                              |                              | Maximum | Minimum | Began (hour) | Ended (hour) | Amount (inches) |                                  |                           |  | MAXIMUM RATE |      |
|   |                   |              |           |                    |                    |                 | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |         |         |              |              |                 |                                  |                           |  | Cu. ft. sec  | Time |
| (1)                                       | (2)               | (3)          | (4)       | (5)                | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)    | (12)    | (13)         | (14)         | (15)            | (16)                             | (17)                      | (18)   |              |      |
| 9-27                                      |                   |              | A.E. Rec. |                    |                    | 0.06            |                             |                              |                              | 78      | 47      | No Runoff    | No Runoff    |                 |                                  |                           |  |              |      |
| 9-28-29                                   |                   |              | "         | 9-28 7PM           | 360                | 0.16            | 0.12                        | 0.10                         |                              |         |         | No Runoff    | No Runoff    |                 |                                  |                           |  |              |      |
| * 9-29                                    | Cult. Past. Woods |              | "         | 5:05A              | 440                | 1.82            | 1.68                        | 0.90                         | 60                           | 47      | 6:14A   | 11:35A       | 0.73 (0.02)  | 2.65            | 9:40A                            | 1.09                      | 1.239 T  |              |      |
|   |                   |              | "         | "                  | "                  | "               | "                           | "                            |                              |         |         | No Runoff    | No Runoff    |                 |                                  |                           | 0.000  |              |      |
| 9-30                                      |                   |              | "         | 3:50P              | 400                | 0.34            | 0.12                        | 0.10                         | 52                           | 46      |         |              |              |                 |                                  |                           | Grass 3-4" high                                      |              |      |
|   |                   |              | "         |                    |                    |                 |                             |                              |                              |         |         |              |              |                 |                                  |                           | Oct. 3--Disseed, lined @ 2 1/2 T/A                   |              |      |
|   |                   |              | "         |                    |                    |                 |                             |                              |                              |         |         |              |              |                 |                                  |                           | Sheep removed from Past. W.S. about Oct. 1           |              |      |
| Oct. 6                                    |                   |              | "         | 3:20P              | 60                 | 0.13            | 0.20                        | 0.14                         | 77                           | 52      |         | No Runoff    | No Runoff    |                 |                                  |                           | Sow wheat  |              |      |
| * 10-7                                    | Cult. Past. Woods |              | "         | 10-6 11:30A        | 215                | 1.68            | 1.80                        | 1.14                         | 75                           | 54      | 12:20P  | 3:44P        | 0.58         | 1.60            | 2:38P                            | 1.10                      | 4.740 T  |              |      |
|   |                   |              | "         | "                  | "                  | 1.63            | "                           | "                            |                              |         | 12:48P  | 4:11P        | 0.08         | 0.32            | 12:48P                           | 1.55                      | T  |              |      |
|   |                   |              | "         | "                  | "                  | 1.72            | "                           | "                            |                              |         |         | No Runoff    | No Runoff    |                 |                                  |                           | Caused by this rain and Oct. 8 Grass about 3-4" high |              |      |
| 10-8                                      | Cult. Past. Woods |              | "         | 1:55A              | 570                | 0.60            | 0.96                        | 0.44                         | 74                           | 62      | 2:48A   | 9:52A        | 0.10         | 0.38            | 6:04A                            | 0.50                      | See Oct. 7 T   |              |      |
|   |                   |              | "         | "                  | "                  | "               | "                           | "                            |                              |         | 6:13A   | 9:54A        | 0.05         | 0.23            | 8:00A                            | 0.55                      | T  |              |      |
| * 10-9-10                                 | Cult. Past. Woods |              | "         | 10-9 A.E. S. 8:40A | 13 hr.             | 1.12            | 1.80                        | 1.69                         | 75                           | 59      | 3:44P   | 6:24A        | 0.79         | 5.35            | 4:07P                            | 0.68                      | 4.221 T  |              |      |
|   |                   |              | "         | "                  | "                  | 1.11            | "                           | "                            |                              |         | 3:50P   | 5:25A        | 0.51         | 4.85            | 4:10P                            | 0.90                      | 0.012 T  |              |      |
|   |                   |              | "         | "                  | "                  | 1.36            | "                           | "                            |                              |         | 4:07P   | 5:48P        | 0.01         | 0.03            | 4:20P                            | 1.35                      | T  |              |      |
| 10-10-11                                  |                   |              | "         |                    |                    | 0.09            |                             |                              | 71                           | 54      |         | No Runoff    | No Runoff    |                 |                                  |                           |  |              |      |
| 10-16                                     | Cult. Past. Woods |              | "         | 8:05A              | 14 hr.             | 0.79            | 0.24                        | 0.18                         | 76                           | 54      |         |              | 0.20         |                 |                                  | 0.59                      | 0.102 T  |              |      |
|   |                   |              | "         | "                  | "                  | "               | "                           | "                            |                              |         |         | No Runoff    | No Runoff    |                 |                                  | 0.78                      | T  |              |      |
| 10-17                                     |                   |              | "         | 10:20A             | 120                | 0.10            |                             |                              | 73                           | 56      |         |              |              |                 |                                  |                           |  |              |      |
| 10-22                                     |                   |              | "         | -                  |                    | 0.03            |                             |                              | 72                           | 53      |         |              |              |                 |                                  |                           |  |              |      |
| 10-22                                     |                   |              | "         | 4:30P              | 450                | 0.12            |                             |                              |                              |         |         |              |              |                 |                                  |                           |  |              |      |
| 10-23                                     |                   |              | "         |                    | 24 hr.             | 0.03            |                             |                              | 62                           | 43      |         |              |              |                 |                                  |                           |  |              |      |



UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
DIVISION OF RESEARCHMONTH 1936  
SHEET 7 OF 7 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

Project Zanesville, Ohio

U. S. SOIL CONSERVATION SERVICE 8-1235A

| DATE     | WATERSHED |              | Oggs No.  | Began (hour) | Duration (minutes) | RAINFALL        |                            |                              | TEMPERATURE (degrees F.) |          |              | RUN-OFF      |                 |                              | RAINFALL METERS RUN-OFF (inches) | SILT LOSS (cubic feet per acre) | CONDITION OF WATERBED |   |               |
|----------|-----------|--------------|-----------|--------------|--------------------|-----------------|----------------------------|------------------------------|--------------------------|----------|--------------|--------------|-----------------|------------------------------|----------------------------------|---------------------------------|-----------------------|---|---------------|
|          | Number    | Area (acres) |           |              |                    | Amount (inches) | MAXIMUM INTENSITY          |                              | Maximum                  | Minimum  | Began (hour) | Ended (hour) | Amount (inches) | MAXIMUM RATE                 |                                  |                                 |                       |   |               |
|          |           |              |           |              |                    |                 | 1 minute (inches per hour) | 15 minutes (inches per hour) |                          |          |              |              |                 | 30 minutes (inches per hour) |                                  |                                 |                       | Ch. ft. sec.                                    | Time          |
| (1)      | (2)       | (3)          | (4)       | (5)          | (6)                | (7)             | (8)                        | (9)                          | (10)                     | (11)     | (12)         | (13)         | (14)            | (15)                         | (16)                             | (17)                            | (18)                  |   |               |
| 10-25-26 | Cult.     |              | A.E. Std. | 10-25        | 11 hr.             | 0.56            | 0.24                       | 0.16                         | 0.10                     | 52       | 35           | 10:37P       | 7:53A           | 0.10                         | 0.34                             | 12:44A                          | 0.46                  | 0.019   | Wheat 1" high |
|          | Past.     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              |              | No Runoff       |                              |                                  |                                 |                       |   |               |
|          | Woods     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              |              | No Runoff       |                              |                                  |                                 |                       |   |               |
|          |           |              |           |              |                    |                 |                            |                              |                          | NOVEMBER |              |              |                 |                              |                                  |                                 |                       |   |               |
| Nov. 1-2 | Cult.     |              | "         | 11-1         | 23 hr.             | 1.34            | 0.72                       | 0.40                         | 0.38                     | 59       | 42           | 11-1         | 11-2            |                              |                                  |                                 |                       |   |               |
|          | Past.     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              | 11:04P       | 11:04A          | 2:09                         | 6:34A                            |                                 |                       |   |               |
|          | Woods     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              | 6:05P        | 12:15P          | 0:77                         | 9:15A                            |                                 |                       |   |               |
| 11-3-4   | Cult.     | Snow         | "         | 11-3         | 31 hr.             | 2.20            | 0.14                       | 0.14                         | 0.14                     | 67       | 46           | 11-3         | 11-5            |                              |                                  |                                 |                       |   |               |
|          | Past.     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              | 11:00P       | 7:09P           | 0:73                         | 11:15P                           | 1.51                            | 1.575                 | Wheat 2" high                                   |               |
|          | Woods     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              | 3:25P        | 11-4            | 0:37                         | 2:52A                            | 1.88                            | 0.015                 | Grass 3-4" high                                 |               |
|          |           |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              | 6:00P        | 6:00P           | 0:03                         | 9:25P                            | 3:36                            |                       | Runoff and soil loss all rains Nov. 1 to 4 inc. |               |
| Dec. 2   | Cult.     | Snow         | "         | 2AM          | 450                | 0.45            | 0.10                       | 0.10                         | 0.10                     | 38       | 11           |              | No Runoff       |                              |                                  |                                 |                       |   |               |
|          | Past.     |              | A.E. Rec. | 6:20A        | 12 hr.             | 0.36            | 0.04                       | 0.04                         | 0.04                     | 43       | 40           |              | No Runoff       |                              |                                  |                                 |                       |   |               |
|          | Woods     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              |              | No Runoff       |                              |                                  |                                 |                       |   |               |
| 12-10-11 | Cult.     |              | "         | 12-10        | 15 hr.             | 0.29            | 0.07                       | 0.07                         | 0.07                     | 48       | 29           | 12-11        | 8:25A           | 0.02                         | 0.01                             | 4:18A                           | 0.27                  | 0.012   | Wheat 2" high |
|          | Past.     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              |              | No Runoff       |                              |                                  |                                 |                       |   |               |
|          | Woods     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              |              | No Runoff       |                              |                                  |                                 |                       |   |               |
| 12-18-19 | Cult.     | Snow & Rain  | "         | 12-18        | 180                | 0.10            |                            |                              |                          | 36       | 26           |              | No Runoff       |                              |                                  |                                 |                       |   |               |
|          | Past.     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              |              | No Runoff       |                              |                                  |                                 |                       |   |               |
|          | Woods     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              |              | No Runoff       |                              |                                  |                                 |                       |   |               |
| 12-19-20 | Cult.     |              | "         | 12-19        | 18 hr.             | 0.23            | 0.08                       | 0.08                         | 0.06                     | 38       | 25           | 12-19        | 12-20           | 0.02                         | 0.05                             | 7:58P                           | 0.21                  | 0.016   |               |
|          | Past.     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              | 12-19        | 1:19A           | No Runoff                    |                                  |                                 |                       |   |               |
|          | Woods     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              | 4:34P        | No Runoff       |                              |                                  |                                 |                       |   |               |
| 12-27    | Cult.     |              | "         | 12PM         | 240                | 0.34            | 0.60                       | 0.36                         | 0.20                     | 60       | 38           |              | No Runoff       |                              |                                  |                                 |                       |   |               |
|          | Past.     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              |              | No Runoff       |                              |                                  |                                 |                       |   |               |
|          | Woods     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              |              | No Runoff       |                              |                                  |                                 |                       |   |               |
| 12-27    | Cult.     |              | A.E. Std. | 7:30P        | 210                | 0.15            | 0.48                       | 0.24                         | 0.16                     | 38       | 31           | 7:33P        | No Runoff       |                              | 0.24                             | 9:38P                           | 0.11                  | 0.135   |               |
|          | Past.     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              |              | No Runoff       |                              |                                  |                                 |                       |   |               |
|          | Woods     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              |              | No Runoff       |                              |                                  |                                 |                       |   |               |
| 12-30-31 | Cult.     |              | "         | 12-30        | 300                | 0.66            | 1.92                       | 0.76                         | 0.48                     | 58       | 36           | 12-30        | 12-31           | 0.43                         | 2.24                             | 1:14A                           | 0.23                  | 3.174   |               |
|          | Past.     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              | 11:03P       | 7:51A           | 0.27                         | 1.24A                            | 0.39                            | 0.007                 | Wheat 2" high                                   |               |
|          | Woods     |              | "         | "            | "                  | "               | "                          | "                            | "                        |          |              | 12-30        | 12:30P          | 0.02                         |                                  | 0.61                            |                       |   |               |

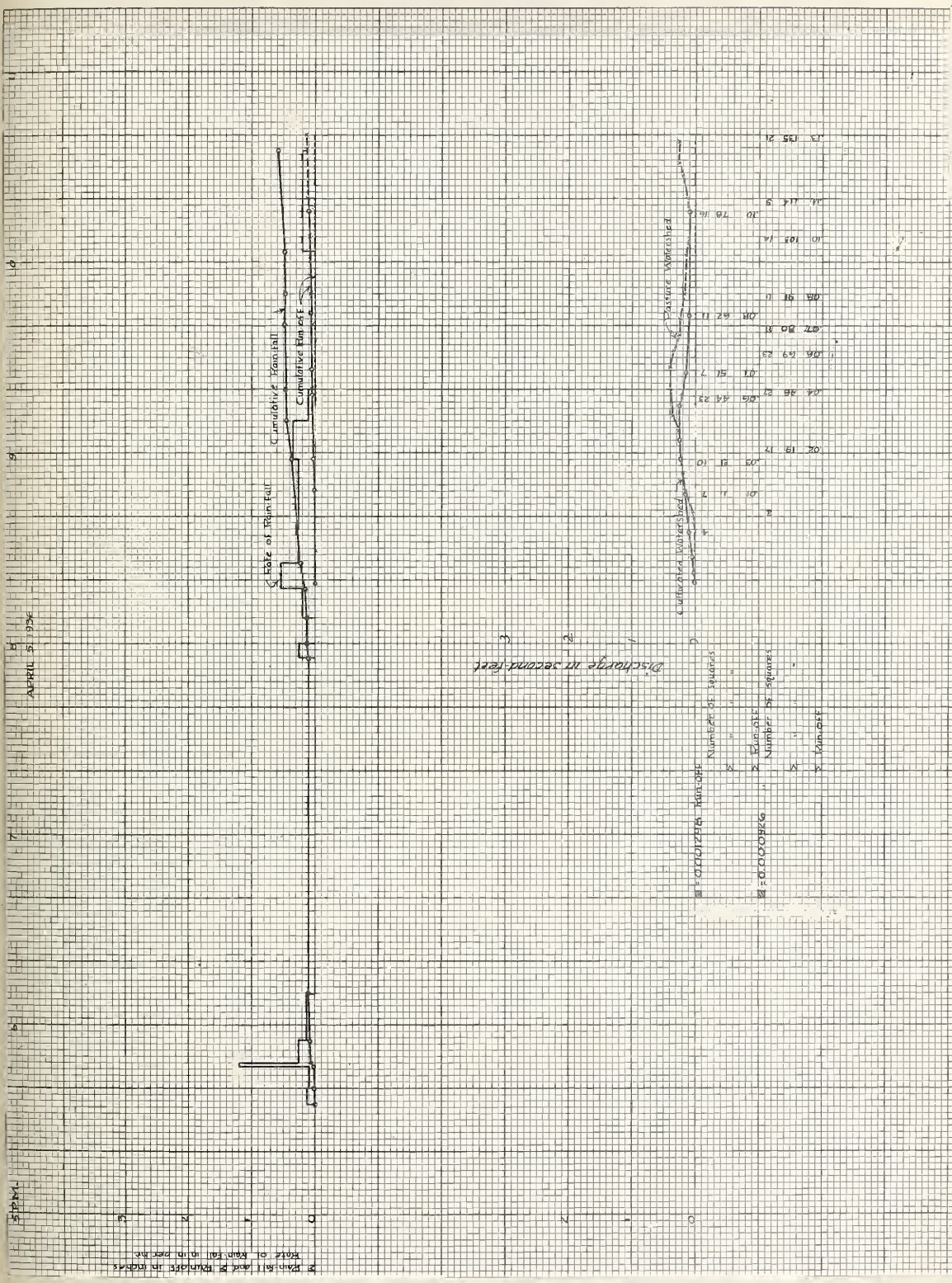










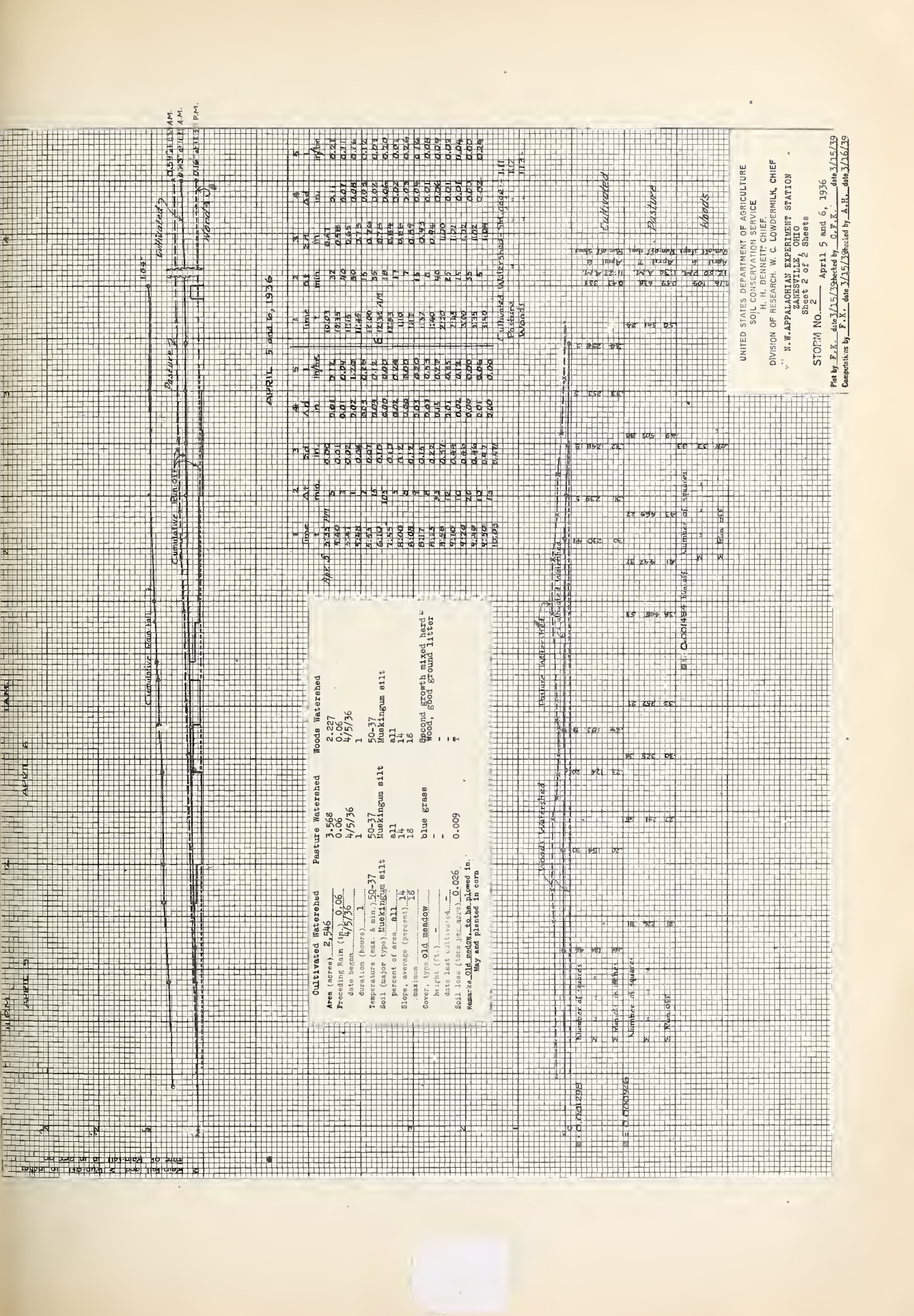


ZANESVILLE, OHIO  
 April 5-6, 1936  
 Sheet 1 of 2 Sheets

No. 1000  
 10 x 10 in. 1/2 in.







APRIL 5 and 6, 1936

**Cultivated Watershed**  
Area (acres).....2.546  
Preceding rain (in).....0.06  
date began.....4/5/36  
duration (hours).....3  
Temperature (max. & min.).....50-37  
Soil (major type).....Hickory  
Percent of area.....all  
Slope, average (percent).....18  
maximum.....18  
Cover, type, old meadow.....  
height (ft.).....  
date last cultivated.....  
Soil loss (estimated).....0.026  
Remarks: Old meadow has plowed in.  
May and planted in corn.

**Pasture Watershed**  
3-568  
4-56  
4/5/36  
50-37  
Hickory  
all  
14  
18  
blue grass  
-  
-  
0.009

**Woods Watershed**  
2-227  
4-56  
4/5/36  
1  
50-37  
Hickory  
all  
14  
18  
Second growth mixed hard-  
wood, good ground litter  
-  
-  
-

| Cultivated   |       | Pasture  |       | Woods  |       |
|--|-------|--|-------|--|-------|
| Area   | Time  | Area   | Time  | Area   | Time  |
| 2.546  | 10:00 | 3.568  | 10:00 | 2.227  | 10:00 |
| 0.06   | 10:00 | 0.06   | 10:00 | 0.06   | 10:00 |
| 4/5/36   | 10:00 | 4/5/36   | 10:00 | 4/5/36   | 10:00 |
| 3  | 10:00 | 3  | 10:00 | 1  | 10:00 |
| 50-37  | 10:00 | 50-37  | 10:00 | 50-37  | 10:00 |
| Hickory  | 10:00 | Hickory  | 10:00 | Hickory  | 10:00 |
| all  | 10:00 | all  | 10:00 | all  | 10:00 |
| 14   | 10:00 | 14   | 10:00 | 14   | 10:00 |
| 18   | 10:00 | 18   | 10:00 | 18   | 10:00 |
| blue grass   | 10:00 | blue grass   | 10:00 | blue grass   | 10:00 |
| -  | 10:00 | -  | 10:00 | -  | 10:00 |
| -  | 10:00 | -  | 10:00 | -  | 10:00 |
| 0.009  | 10:00 | 0.009  | 10:00 | 0.009  | 10:00 |
| Remarks: Old meadow has plowed in.<br>May and planted in corn. | 10:00 | Remarks: Old meadow has plowed in.<br>May and planted in corn. | 10:00 | Remarks: Old meadow has plowed in.<br>May and planted in corn. | 10:00 |

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
H. H. BENNETT, CHIEF  
DIVISION OF RESEARCH, W. C. LOWMEYER, CHIEF  
F. W. APPALACHIAN EXPERIMENT STATION  
ZANESVILLE, OHIO  
Sheet 2 of 2 Sheets  
STOP No. 2 April 5 and 6, 1936  
Plot by F. K. date 3/15/36 checked by G. F. K. date 3/15/39  
Completed by F. K. date 3/15/39 checked by A. H. date 3/16/39





STORM NO. 3      July 4, 1936  
Sheet 1 of 1 Sheet

Plot by F. K. date 3/16/36 checked by C. F. K. date 3/16/39  
Computations by C. K. date 3/16 checked by A. H. date 3/17/39





| 1       | 2   | 3    | 4    | 5     |
|---------|-----|------|------|-------|
| time    | Δt  | Δt   | Δt   | t     |
| t       | min | in   | in   | yr/yr |
| 100 PNY | 5   | 0.00 | 0.02 | 0.04  |
| 125     | 10  | 0.02 | 0.04 | 0.12  |
| 150     | 15  | 0.04 | 0.06 | 0.00  |
| 175     | 20  | 0.06 | 0.06 | 1.80  |
| 200     | 25  | 0.10 | 0.00 | 0.00  |
| 225     | 30  | 0.10 | 0.00 | 0.00  |
| 250     | 35  | 0.13 | 0.03 | 0.00  |
| 275     | 40  | 0.13 | 0.03 | 0.11  |
| 300     | 45  | 0.16 | 0.07 | 0.00  |
| 325     | 50  | 0.17 | 0.07 | 0.00  |
| 350     | 55  | 0.23 | 0.07 | 0.00  |
| 375     | 60  | 0.27 | 0.07 | 0.00  |
| 400     | 65  | 0.30 | 0.07 | 0.00  |
| 425     | 70  | 0.30 | 0.07 | 0.00  |
| 450     | 75  | 0.35 | 0.09 | 0.00  |
| 475     | 80  | 0.35 | 0.09 | 0.00  |
| 500     | 85  | 0.35 | 0.09 | 0.00  |
| 525     | 90  | 0.35 | 0.09 | 0.00  |
| 550     | 95  | 0.35 | 0.09 | 0.00  |
| 575     | 100 | 0.35 | 0.09 | 0.00  |
| 600     | 105 | 0.35 | 0.09 | 0.00  |
| 625     | 110 | 0.35 | 0.09 | 0.00  |
| 650     | 115 | 0.35 | 0.09 | 0.00  |
| 675     | 120 | 0.35 | 0.09 | 0.00  |
| 700     | 125 | 0.35 | 0.09 | 0.00  |
| 725     | 130 | 0.35 | 0.09 | 0.00  |
| 750     | 135 | 0.35 | 0.09 | 0.00  |
| 775     | 140 | 0.35 | 0.09 | 0.00  |
| 800     | 145 | 0.35 | 0.09 | 0.00  |
| 825     | 150 | 0.35 | 0.09 | 0.00  |
| 850     | 155 | 0.35 | 0.09 | 0.00  |
| 875     | 160 | 0.35 | 0.09 | 0.00  |
| 900     | 165 | 0.35 | 0.09 | 0.00  |
| 925     | 170 | 0.35 | 0.09 | 0.00  |
| 950     | 175 | 0.35 | 0.09 | 0.00  |
| 975     | 180 | 0.35 | 0.09 | 0.00  |
| 1000    | 185 | 0.35 | 0.09 | 0.00  |
| 1025    | 190 | 0.35 | 0.09 | 0.00  |
| 1050    | 195 | 0.35 | 0.09 | 0.00  |
| 1075    | 200 | 0.35 | 0.09 | 0.00  |
| 1100    | 205 | 0.35 | 0.09 | 0.00  |
| 1125    | 210 | 0.35 | 0.09 | 0.00  |
| 1150    | 215 | 0.35 | 0.09 | 0.00  |
| 1175    | 220 | 0.35 | 0.09 | 0.00  |
| 1200    | 225 | 0.35 | 0.09 | 0.00  |
| 1225    | 230 | 0.35 | 0.09 | 0.00  |
| 1250    | 235 | 0.35 | 0.09 | 0.00  |
| 1275    | 240 | 0.35 | 0.09 | 0.00  |
| 1300    | 245 | 0.35 | 0.09 | 0.00  |
| 1325    | 250 | 0.35 | 0.09 | 0.00  |
| 1350    | 255 | 0.35 | 0.09 | 0.00  |
| 1375    | 260 | 0.35 | 0.09 | 0.00  |
| 1400    | 265 | 0.35 | 0.09 | 0.00  |
| 1425    | 270 | 0.35 | 0.09 | 0.00  |
| 1450    | 275 | 0.35 | 0.09 | 0.00  |
| 1475    | 280 | 0.35 | 0.09 | 0.00  |
| 1500    | 285 | 0.35 | 0.09 | 0.00  |
| 1525    | 290 | 0.35 | 0.09 | 0.00  |
| 1550    | 295 | 0.35 | 0.09 | 0.00  |
| 1575    | 300 | 0.35 | 0.09 | 0.00  |
| 1600    | 305 | 0.35 | 0.09 | 0.00  |
| 1625    | 310 | 0.35 | 0.09 | 0.00  |
| 1650    | 315 | 0.35 | 0.09 | 0.00  |
| 1675    | 320 | 0.35 | 0.09 | 0.00  |
| 1700    | 325 | 0.35 | 0.09 | 0.00  |
| 1725    | 330 | 0.35 | 0.09 | 0.00  |
| 1750    | 335 | 0.35 | 0.09 | 0.00  |
| 1775    | 340 | 0.35 | 0.09 | 0.00  |
| 1800    | 345 | 0.35 | 0.09 | 0.00  |
| 1825    | 350 | 0.35 | 0.09 | 0.00  |
| 1850    | 355 | 0.35 | 0.09 | 0.00  |
| 1875    | 360 | 0.35 | 0.09 | 0.00  |
| 1900    | 365 | 0.35 | 0.09 | 0.00  |
| 1925    | 370 | 0.35 | 0.09 | 0.00  |
| 1950    | 375 | 0.35 | 0.09 | 0.00  |
| 1975    | 380 | 0.35 | 0.09 | 0.00  |
| 2000    | 385 | 0.35 | 0.09 | 0.00  |
| 2025    | 390 | 0.35 | 0.09 | 0.00  |
| 2050    | 395 | 0.35 | 0.09 | 0.00  |
| 2075    | 400 | 0.35 | 0.09 | 0.00  |
| 2100    | 405 | 0    |      |       |

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N.W. APPALACHIAN EXPERIMENT STATION  
ZANESVILLE, OHIO  
Sheet 1 of 1 Sheet

STORM NO. 4 July 23, 1936  
Plot by F.K. date 3/16/36 checked by C.K.  
Computations by F.K. date 3/16/39 checked by O.

Cultivated Watershed

Area (acres).....2.546  
Preceding grain (n.).....CORN  
date begun.....7/14/36  
duration (hours).....2  
Temperature (max. & min.).....90-63  
Soil (major type).....Lushington silt  
Percent of area all.....  
Slope, average (percent).....14  
          maximum.....16  
Cover, type.....CORN  
height (ft.).....1 ft., 7 in.  
date last cultivated.....  
Soil loss (tons per acre).....2.55  
Remarks.....Old sodden place, in  
          center of field  
**A B C D E F G H I J K L M N O P Q R S T U V W X Y Z**  
**INDEX CONTENTS**

Approx. contour  
planted in corn

Cultivated Watershed

| Run: off  | Number of squares |
|-----------|-------------------|
| 2:0001294 |                   |

W

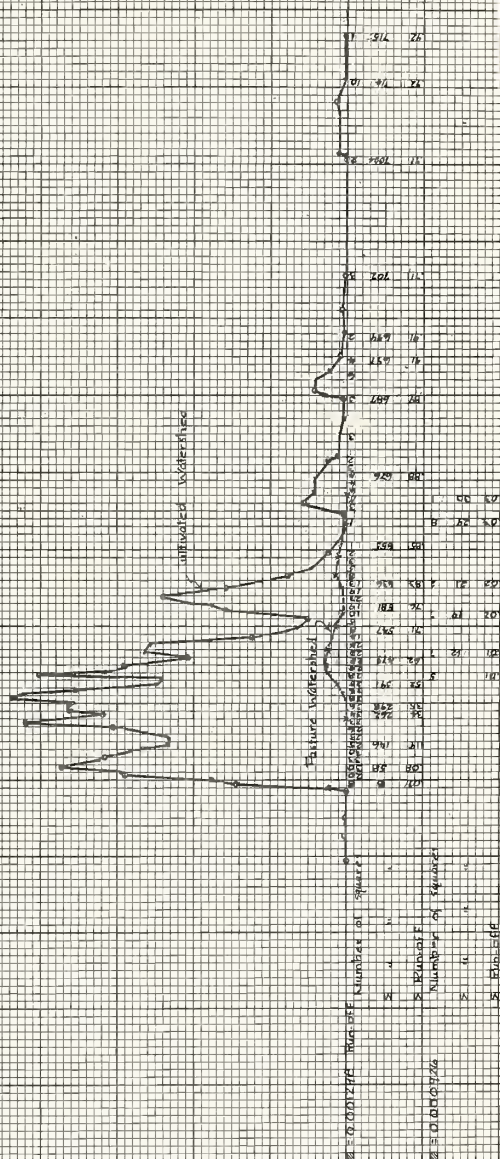
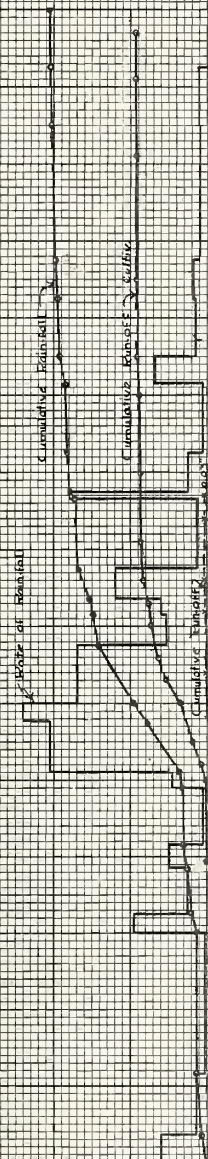
Σ Run-off

# Is Reforestation Worthy?





Sheet 1 of 2 Sheets



2. Roundball and 2. Roundoff in inches  
Rate of Roundoff in inches per







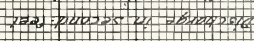




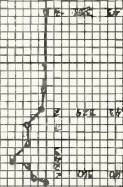
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|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|



Cultivated Watershed \_\_\_\_\_  
 Area (acres) 2,150  
 Freezing Rain (in.) 0.03  
 date began 8/25  
 duration (hours) \_\_\_\_\_  
 Temperature (max. & min.) 33-66  
 soil (major type, & depth) allt  
 percent of area all  
 Slope, average (percent) 11  
 maximum \_\_\_\_\_12  
 Cover, type oak  
 height (ft.) 5, 10 in.  
 date last cultivated 6/2  
 soil loss (tons per acre) 1,25  
 Remarks Corn approx.  
on con tour



No Runoff on Pasture or Woods Areas

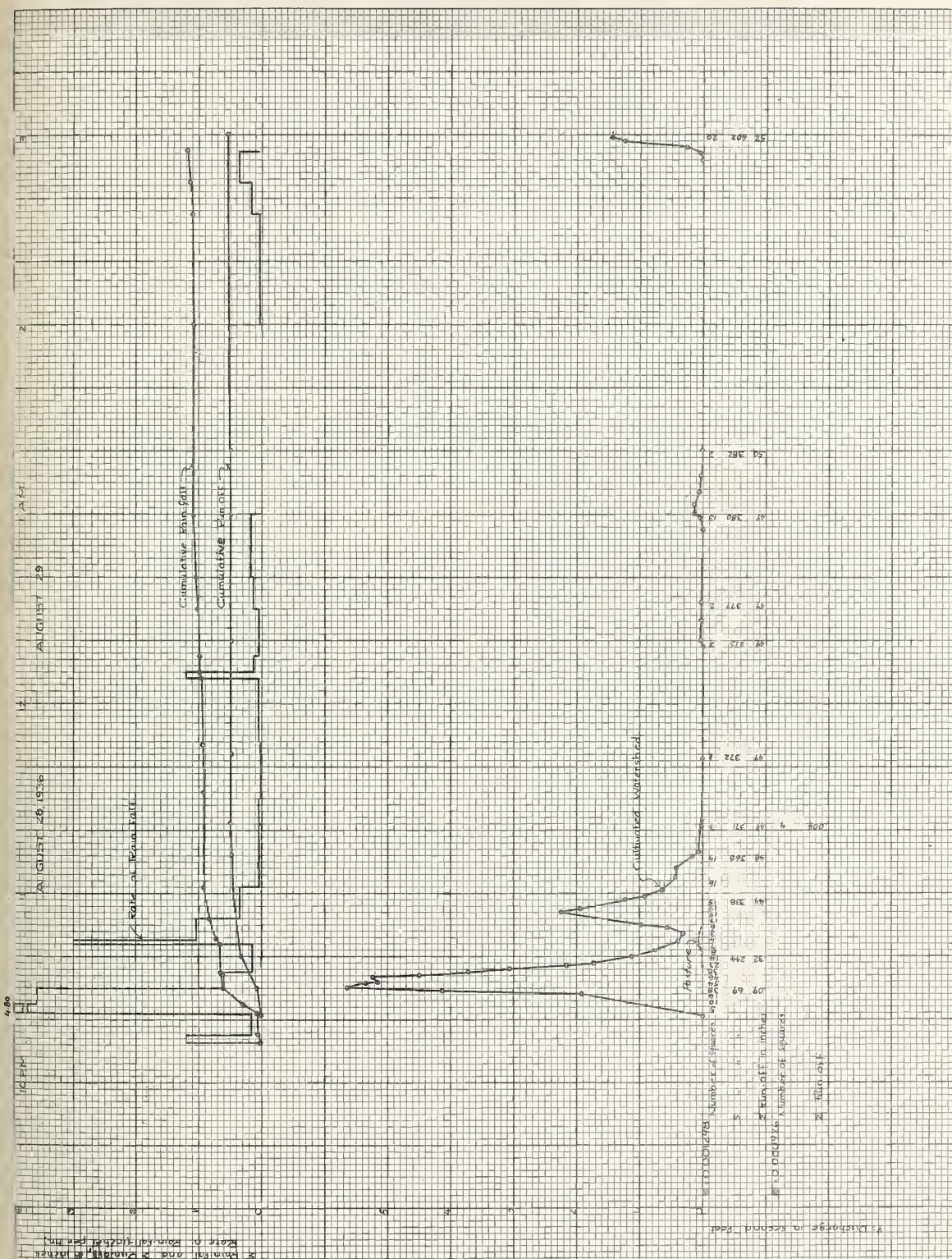
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DIVISION OF RESEARCH, W. C. LOWDERMILK, CHIEF  
N. W. APPALACHIAN EXPERIMENT STATION  
ZANESVILLE, OHIO

Sheet 1 of 1 Sheet  
STORM NO. 6 August 25, 1936  
Plot by F. K., date 3/17/39 checked by G. F. K., date 3/18/39  
Computations by F. K., date 3/17/39 checked by G. F. K. date 3/18/39







ZANESVILLE, OHIO  
 August 28-29, 1936  
 Sheet 1 of 2 Sheets





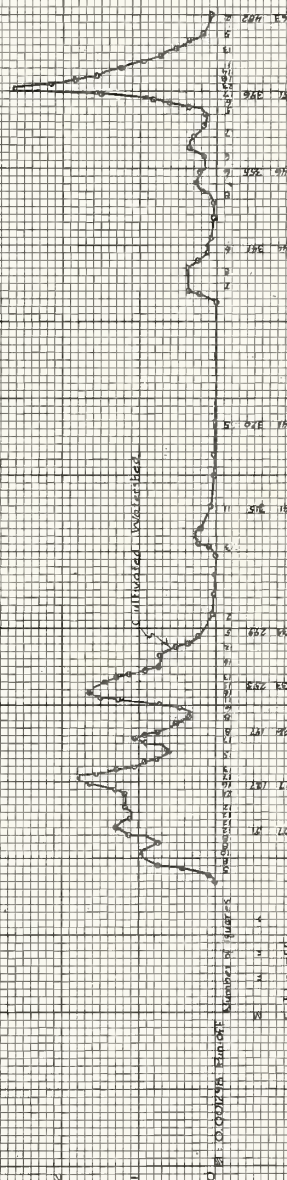
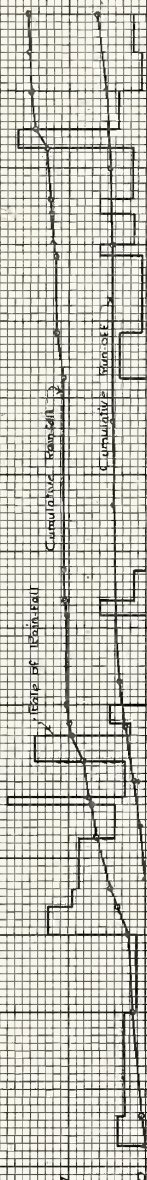






WATER LEVEL 28, 1936

From point of runoff to point of measurement  
 from point of runoff to point of measurement







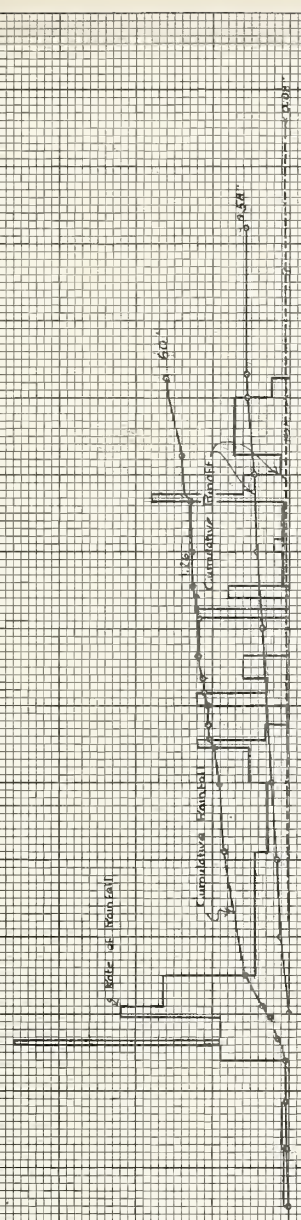
SEPTEMBER 29, 1936

| Time    | $\Delta t$ | $\Delta A$ | $\Delta A$ | $\Delta A$ | $\Delta A$ |
|---------|------------|------------|------------|------------|------------|
| 5:05 AM | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
| 5:15    | 0.10       | 0.05       | 0.05       | 0.05       | 0.05       |
| 5:25    | 0.10       | 0.10       | 0.10       | 0.10       | 0.10       |
| 5:35    | 0.10       | 0.15       | 0.15       | 0.15       | 0.15       |
| 5:45    | 0.10       | 0.20       | 0.20       | 0.20       | 0.20       |
| 5:55    | 0.10       | 0.25       | 0.25       | 0.25       | 0.25       |
| 6:05    | 0.10       | 0.30       | 0.30       | 0.30       | 0.30       |
| 6:15    | 0.10       | 0.35       | 0.35       | 0.35       | 0.35       |
| 6:25    | 0.10       | 0.40       | 0.40       | 0.40       | 0.40       |
| 6:35    | 0.10       | 0.45       | 0.45       | 0.45       | 0.45       |
| 6:45    | 0.10       | 0.50       | 0.50       | 0.50       | 0.50       |
| 6:55    | 0.10       | 0.55       | 0.55       | 0.55       | 0.55       |
| 7:05    | 0.10       | 0.60       | 0.60       | 0.60       | 0.60       |
| 7:15    | 0.10       | 0.65       | 0.65       | 0.65       | 0.65       |
| 7:25    | 0.10       | 0.70       | 0.70       | 0.70       | 0.70       |
| 7:35    | 0.10       | 0.75       | 0.75       | 0.75       | 0.75       |
| 7:45    | 0.10       | 0.80       | 0.80       | 0.80       | 0.80       |
| 7:55    | 0.10       | 0.85       | 0.85       | 0.85       | 0.85       |
| 8:05    | 0.10       | 0.90       | 0.90       | 0.90       | 0.90       |
| 8:15    | 0.10       | 0.95       | 0.95       | 0.95       | 0.95       |
| 8:25    | 0.10       | 1.00       | 1.00       | 1.00       | 1.00       |
| 8:35    | 0.10       | 1.05       | 1.05       | 1.05       | 1.05       |
| 8:45    | 0.10       | 1.10       | 1.10       | 1.10       | 1.10       |
| 8:55    | 0.10       | 1.15       | 1.15       | 1.15       | 1.15       |
| 9:05    | 0.10       | 1.20       | 1.20       | 1.20       | 1.20       |
| 9:15    | 0.10       | 1.25       | 1.25       | 1.25       | 1.25       |
| 9:25    | 0.10       | 1.30       | 1.30       | 1.30       | 1.30       |
| 9:35    | 0.10       | 1.35       | 1.35       | 1.35       | 1.35       |
| 9:45    | 0.10       | 1.40       | 1.40       | 1.40       | 1.40       |
| 9:55    | 0.10       | 1.45       | 1.45       | 1.45       | 1.45       |
| 10:05   | 0.10       | 1.50       | 1.50       | 1.50       | 1.50       |
| 10:15   | 0.10       | 1.55       | 1.55       | 1.55       | 1.55       |
| 10:25   | 0.10       | 1.60       | 1.60       | 1.60       | 1.60       |
| 10:35   | 0.10       | 1.65       | 1.65       | 1.65       | 1.65       |
| 10:45   | 0.10       | 1.70       | 1.70       | 1.70       | 1.70       |
| 10:55   | 0.10       | 1.75       | 1.75       | 1.75       | 1.75       |
| 11:05   | 0.10       | 1.80       | 1.80       | 1.80       | 1.80       |
| 11:15   | 0.10       | 1.85       | 1.85       | 1.85       | 1.85       |
| 11:25   | 0.10       | 1.90       | 1.90       | 1.90       | 1.90       |
| 11:35   | 0.10       | 1.95       | 1.95       | 1.95       | 1.95       |
| 11:45   | 0.10       | 2.00       | 2.00       | 2.00       | 2.00       |
| 11:55   | 0.10       | 2.05       | 2.05       | 2.05       | 2.05       |
| 12:05   | 0.10       | 2.10       | 2.10       | 2.10       | 2.10       |
| 12:15   | 0.10       | 2.15       | 2.15       | 2.15       | 2.15       |
| 12:25   | 0.10       | 2.20       | 2.20       | 2.20       | 2.20       |
| 12:35   | 0.10       | 2.25       | 2.25       | 2.25       | 2.25       |
| 12:45   | 0.10       | 2.30       | 2.30       | 2.30       | 2.30       |
| 12:55   | 0.10       | 2.35       | 2.35       | 2.35       | 2.35       |
| 1:05    | 0.10       | 2.40       | 2.40       | 2.40       | 2.40       |
| 1:15    | 0.10       | 2.45       | 2.45       | 2.45       | 2.45       |
| 1:25    | 0.10       | 2.50       | 2.50       | 2.50       | 2.50       |
| 1:35    | 0.10       | 2.55       | 2.55       | 2.55       | 2.55       |
| 1:45    | 0.10       | 2.60       | 2.60       | 2.60       | 2.60       |
| 1:55    | 0.10       | 2.65       | 2.65       | 2.65       | 2.65       |
| 2:05    | 0.10       | 2.70       | 2.70       | 2.70       | 2.70       |
| 2:15    | 0.10       | 2.75       | 2.75       | 2.75       | 2.75       |
| 2:25    | 0.10       | 2.80       | 2.80       | 2.80       | 2.80       |
| 2:35    | 0.10       | 2.85       | 2.85       | 2.85       | 2.85       |
| 2:45    | 0.10       | 2.90       | 2.90       | 2.90       | 2.90       |
| 2:55    | 0.10       | 2.95       | 2.95       | 2.95       | 2.95       |
| 3:05    | 0.10       | 3.00       | 3.00       | 3.00       | 3.00       |
| 3:15    | 0.10       | 3.05       | 3.05       | 3.05       | 3.05       |
| 3:25    | 0.10       | 3.10       | 3.10       | 3.10       | 3.10       |
| 3:35    | 0.10       | 3.15       | 3.15       | 3.15       | 3.15       |
| 3:45    | 0.10       | 3.20       | 3.20       | 3.20       | 3.20       |
| 3:55    | 0.10       | 3.25       | 3.25       | 3.25       | 3.25       |
| 4:05    | 0.10       | 3.30       | 3.30       | 3.30       | 3.30       |
| 4:15    | 0.10       | 3.35       | 3.35       | 3.35       | 3.35       |
| 4:25    | 0.10       | 3.40       | 3.40       | 3.40       | 3.40       |
| 4:35    | 0.10       | 3.45       | 3.45       | 3.45       | 3.45       |
| 4:45    | 0.10       | 3.50       | 3.50       | 3.50       | 3.50       |
| 4:55    | 0.10       | 3.55       | 3.55       | 3.55       | 3.55       |
| 5:05    | 0.10       | 3.60       | 3.60       | 3.60       | 3.60       |
| 5:15    | 0.10       | 3.65       | 3.65       | 3.65       | 3.65       |
| 5:25    | 0.10       | 3.70       | 3.70       | 3.70       | 3.70       |
| 5:35    | 0.10       | 3.75       | 3.75       | 3.75       | 3.75       |
| 5:45    | 0.10       | 3.80       | 3.80       | 3.80       | 3.80       |
| 5:55    | 0.10       | 3.85       | 3.85       | 3.85       | 3.85       |
| 6:05    | 0.10       | 3.90       | 3.90       | 3.90       | 3.90       |
| 6:15    | 0.10       | 3.95       | 3.95       | 3.95       | 3.95       |
| 6:25    | 0.10       | 4.00       | 4.00       | 4.00       | 4.00       |
| 6:35    | 0.10       | 4.05       | 4.05       | 4.05       | 4.05       |
| 6:45    | 0.10       | 4.10       | 4.10       | 4.10       | 4.10       |
| 6:55    | 0.10       | 4.15       | 4.15       | 4.15       | 4.15       |
| 7:05    | 0.10       | 4.20       | 4.20       | 4.20       | 4.20       |
| 7:15    | 0.10       | 4.25       | 4.25       | 4.25       | 4.25       |
| 7:25    | 0.10       | 4.30       | 4.30       | 4.30       | 4.30       |
| 7:35    | 0.10       | 4.35       | 4.35       | 4.35       | 4.35       |
| 7:45    | 0.10       | 4.40       | 4.40       | 4.40       | 4.40       |
| 7:55    | 0.10       | 4.45       | 4.45       | 4.45       | 4.45       |
| 8:05    | 0.10       | 4.50       | 4.50       | 4.50       | 4.50       |
| 8:15    | 0.10       | 4.55       | 4.55       | 4.55       | 4.55       |
| 8:25    | 0.10       | 4.60       | 4.60       | 4.60       | 4.60       |
| 8:35    | 0.10       | 4.65       | 4.65       | 4.65       | 4.65       |
| 8:45    | 0.10       | 4.70       | 4.70       | 4.70       | 4.70       |
| 8:55    | 0.10       | 4.75       | 4.75       | 4.75       | 4.75       |
| 9:05    | 0.10       | 4.80       | 4.80       | 4.80       | 4.80       |
| 9:15    | 0.10       | 4.85       | 4.85       | 4.85       | 4.85       |
| 9:25    | 0.10       | 4.90       | 4.90       | 4.90       | 4.90       |
| 9:35    | 0.10       | 4.95       | 4.95       | 4.95       | 4.95       |
| 9:45    | 0.10       | 5.00       | 5.00       | 5.00       | 5.00       |
| 9:55    | 0.10       | 5.05       | 5.05       | 5.05       | 5.05       |
| 10:05   | 0.10       | 5.10       | 5.10       | 5.10       | 5.10       |
| 10:15   | 0.10       | 5.15       | 5.15       | 5.15       | 5.15       |
| 10:25   | 0.10       | 5.20       | 5.20       | 5.20       | 5.20       |
| 10:35   | 0.10       | 5.25       | 5.25       | 5.25       | 5.25       |
| 10:45   | 0.10       | 5.30       | 5.30       | 5.30       | 5.30       |
| 10:55   | 0.10       | 5.35       | 5.35       | 5.35       | 5.35       |
| 11:05   | 0.10       | 5.40       | 5.40       | 5.40       | 5.40       |
| 11:15   | 0.10       | 5.45       | 5.45       | 5.45       | 5.45       |
| 11:25   | 0.10       | 5.50       | 5.50       | 5.50       | 5.50       |
| 11:35   | 0.10       | 5.55       | 5.55       | 5.55       | 5.55       |
| 11:45   | 0.10       | 5.60       | 5.60       | 5.60       | 5.60       |
| 11:55   | 0.10       | 5.65       | 5.65       | 5.65       | 5.65       |
| 12:05   | 0.10       | 5.70       | 5.70       | 5.70       | 5.70       |
| 12:15   | 0.10       | 5.75       | 5.75       | 5.75       | 5.75       |
| 12:25   | 0.10       | 5.80       | 5.80       | 5.80       | 5.80       |
| 12:35   | 0.10       | 5.85       | 5.85       | 5.85       | 5.85       |
| 12:45   | 0.10       | 5.90       | 5.90       | 5.90       | 5.90       |
| 12:55   | 0.10       | 5.95       | 5.95       | 5.95       | 5.95       |
| 1:05    | 0.10       | 6.00       | 6.00       | 6.00       | 6.00       |
| 1:15    | 0.10       | 6.05       | 6.05       | 6.05       | 6.05       |
| 1:25    | 0.10       | 6.10       | 6.10       | 6.10       | 6.10       |
| 1:35    | 0.10       | 6.15       | 6.15       | 6.15       | 6.15       |
| 1:45    | 0.10       | 6.20       | 6.20       | 6.20       | 6.20       |
| 1:55    | 0.10       | 6.25       | 6.25       | 6.25       | 6.25       |
| 2:05    | 0.10       | 6.30       | 6.30       | 6.30       | 6.30       |
| 2:15    | 0.10       | 6.35       | 6.35       | 6.35       | 6.35       |
| 2:25    | 0.10       | 6.40       | 6.40       | 6.40       | 6.40       |
| 2:35    | 0.10       | 6.45       | 6.45       | 6.45       | 6.45       |
| 2:45    | 0.10       | 6.50       | 6.50       | 6.50       | 6.50       |
| 2:55    | 0.10       | 6.55       | 6.55       | 6.55       | 6.55       |
| 3:05    | 0.10       | 6.60       | 6.60       | 6.60       | 6.60       |
| 3:15    | 0.10       | 6.65       | 6.65       | 6.65       | 6.65       |
| 3:25    | 0.10       | 6.70       | 6.70       | 6.70       | 6.70       |
| 3:35    | 0.10       | 6.75       | 6.75       | 6.75       | 6.75       |
| 3:45    | 0.10       | 6.80       | 6.80       | 6.80       | 6.80       |
| 3:55    | 0.10       | 6.85       | 6.85       | 6.85       | 6.85       |
| 4:05    | 0.10       | 6.90       | 6.90       | 6.90       | 6.90       |
| 4:15    | 0.10       | 6.95       | 6.95       | 6.95       | 6.95       |
| 4:25    | 0.10       | 7.00       | 7.00       | 7.00       | 7.00       |
| 4:35    | 0.10       | 7.05       | 7.05       | 7.05       | 7.05       |
| 4:45    | 0.10       | 7.10       | 7.10       | 7.10       | 7.10       |
| 4:55    | 0.10       | 7.15       | 7.15       | 7.15       | 7.15       |
| 5:05    | 0.10       | 7.20       | 7.20       | 7.20       | 7.20       |
| 5:15    | 0.10       | 7.25       | 7.25       | 7.25       | 7.25       |
| 5:25    | 0.10       | 7.30       | 7.30       | 7.30       | 7.30       |
| 5:35    | 0.10       | 7.35       | 7.35       | 7.35       | 7.35       |
| 5:45    | 0.10       | 7.40       | 7.40       | 7.40       | 7.40       |
| 5:55    | 0.10       | 7.45       | 7.45       | 7.45       | 7.45       |
| 6:05    | 0.10       | 7.50       | 7.50       | 7.50       | 7.50       |
| 6:15    | 0.10       | 7.55       | 7.55       | 7.55       | 7.55       |
| 6:25    | 0.10       | 7.60       | 7.60       | 7.60       | 7.60       |
| 6:35    | 0.10       | 7.65       | 7.65       | 7.65       | 7.65       |
| 6:45    | 0.10       | 7.70       | 7.70       | 7.70       | 7.70       |
| 6:55    | 0.10       | 7.75       | 7.75       | 7.75       | 7.75       |
| 7:05    | 0.10       | 7.80       | 7.80       | 7.80       | 7.80       |
| 7:15    | 0.10       | 7.85       | 7.85       | 7.85       | 7.85       |
| 7:25    | 0.10       | 7.90       | 7.90       | 7.90       | 7.90       |
| 7:35    | 0.10       | 7.95       | 7.95       | 7.95       | 7.95       |
| 7:45    | 0.10       | 8.00       | 8.00       | 8.00       | 8.00       |
| 7:55    | 0.10       | 8.05       | 8.05       | 8.05       | 8.05       |
| 8:05    | 0.10       | 8.10       | 8.10       | 8.10       | 8.10       |
| 8:15    | 0.10       | 8.15       | 8.15       | 8.15       | 8.15       |
| 8:25    | 0.10       | 8.20       | 8.20       | 8.20       | 8.20       |
| 8:35    | 0.10       | 8.25       | 8.25       | 8.25       | 8.25       |
| 8:45    | 0.10       | 8.30       | 8.30       | 8.30       | 8.30       |
| 8:55    | 0.10       | 8.35       | 8.35       | 8.35       | 8.35       |
| 9:05    | 0.10       | 8.40       | 8.40       | 8.40       | 8.40       |
| 9:15    | 0.10       | 8.45       | 8.45       | 8.45       | 8.45       |
| 9:25    | 0.10       | 8.50       | 8.50       | 8.50       | 8.50       |
| 9:35    | 0.10       | 8.55       | 8.55       | 8.55       | 8.55       |
| 9:45    | 0.10       | 8.60       | 8.60       | 8.60       | 8.60       |
| 9:55    | 0.10       | 8.65       | 8.65       | 8.65       | 8.65       |
| 10:05   | 0.10       | 8.70       | 8.70       | 8.70       | 8.70       |
| 10:15   | 0.10       | 8.75       | 8.75       | 8.75       | 8.75       |
| 10:25   | 0.10       | 8.80       | 8.80       | 8.80       | 8.80       |
| 10:35   | 0.10       | 8.85       | 8.85       | 8.85       | 8.85       |
| 10:45   | 0.10       | 8.90       | 8.90       | 8.90       | 8.90       |
| 10:55   | 0.10       | 8.95       | 8.95       | 8.95       | 8.95       |
| 11:05   | 0.10       | 9.00       | 9.00       | 9.00       | 9.00       |
| 11:15   | 0.10       | 9.05       | 9.05       | 9.05       | 9.05       |
| 11:25   | 0.10       | 9.10       | 9.10       | 9.10       | 9.10       |
| 11:35   | 0.10       | 9.15       | 9.15       | 9.15       | 9.15       |
| 11:45   | 0.10       | 9.20       | 9.20       | 9.20       | 9.20       |
| 11:55   | 0.10       | 9.25       | 9.25       | 9.25       | 9.25       |
| 12:05   | 0.10       | 9.30       | 9.30       | 9.30       | 9.30       |
| 12:15   | 0.10       | 9.35       | 9.35       | 9.35       | 9.35       |
| 12:25   | 0.10       | 9.40       | 9.40       | 9.40       | 9.40       |
| 12:35   | 0.10       | 9.45       | 9.45       | 9.45       | 9.45       |
| 12:45   | 0.10       | 9.50       | 9.50       | 9.50       | 9.50       |
| 12:55   | 0.10       | 9.55       | 9.55       | 9.55       | 9.55       |
| 1:05    | 0.10       | 9.60       | 9.60       | 9.60       | 9.60       |
| 1:15    | 0.10       | 9.65       | 9.65       | 9.65       | 9.65       |
| 1:25    | 0.10       | 9.70       | 9.70       | 9.70       | 9.70       |
| 1:35    | 0.10       | 9.75       | 9.75       | 9.75       | 9.75       |
| 1:45    | 0.10       | 9.80       | 9.80       | 9.80       | 9.80       |
| 1:55    | 0.10       | 9.85       | 9.85       | 9.85       | 9.85       |
| 2:05    | 0.10       | 9.90       | 9.90       | 9.90       | 9.90       |
| 2:15    | 0.10       | 9.95       | 9.95       | 9.95       | 9.95       |
| 2:25    | 0.10       | 10.00      | 10.00      | 10.00      | 10.00      |
| 2:35    | 0.10       | 10.05      | 10.05      | 10.05      | 10.05      |
| 2:45    |            |            |            |            |            |

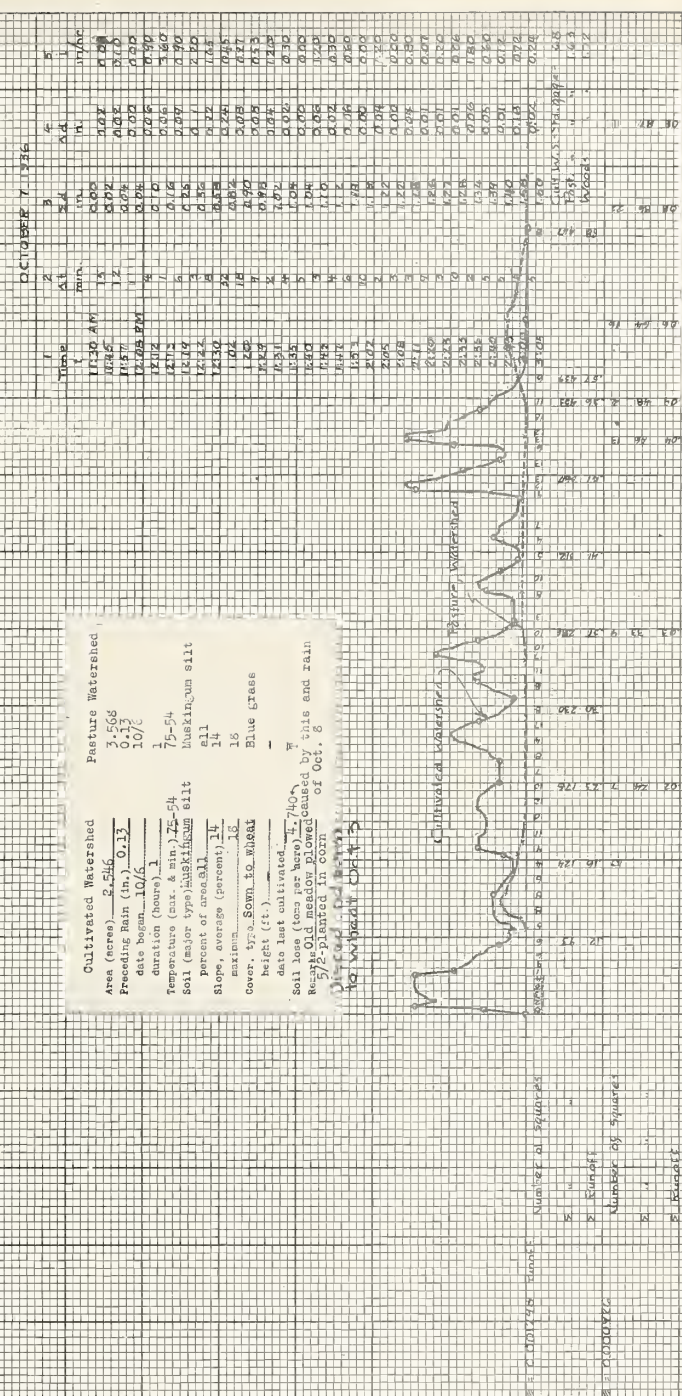




OCTOBER 7, 1936



**Cultivated Watershed**  
 Area (acres) 2.546  
 Precipitating Rain (in.) 0.13  
 date begun 10/6  
 duration (hours) 1  
 Temperature (air & soil) 75-54  
 Soil (major type) Muskingum silt  
 percent of area all 14  
 Slope, average (percent) 14  
 maximum 18  
 Cover, type, Soil to Road  
 height (ft.) 100  
 date last cultivated 10/6  
 Soil loss (tons per acre) 1.700  
 Remarks: Old meadow plowed caused by this and rain  
 of Oct. 6  
 10/6  
 to wheat 10/6



| Time     | Discharge (cfs) | Cumulative Rainfall (in.) |
|----------|-----------------|---------------------------|
| 11:10 AM | 10              | 0.00                      |
| 11:45    | 15              | 0.02                      |
| 12:15    | 20              | 0.04                      |
| 12:45 PM | 30              | 0.06                      |
| 1:15     | 40              | 0.08                      |
| 1:45     | 50              | 0.10                      |
| 2:15     | 60              | 0.12                      |
| 2:45     | 70              | 0.13                      |
| 3:15     | 80              | 0.13                      |
| 3:45     | 90              | 0.13                      |
| 4:15     | 100             | 0.13                      |
| 4:45     | 90              | 0.13                      |
| 5:15     | 80              | 0.13                      |
| 5:45     | 70              | 0.13                      |
| 6:15     | 60              | 0.13                      |
| 6:45     | 50              | 0.13                      |
| 7:15     | 40              | 0.13                      |
| 7:45     | 30              | 0.13                      |
| 8:15     | 20              | 0.13                      |
| 8:45     | 15              | 0.13                      |
| 9:15     | 10              | 0.13                      |
| 9:45     | 5               | 0.13                      |
| 10:00 PM | 0               | 0.13                      |

UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 H. H. BENNETT, CHIEF  
 DIVISION OF RESEARCH, W. C. LOWDERMILK, CHIEF  
 N. W. APPALACHIAN EXPERIMENT STATION  
 ZANESVILLE, OHIO

STORM NO. 9—October 7, 1936  
 Sheet 1 of 1 Sheet  
 Plot by A. J. H. date 3/20/36 checked by E. R. date 3/20/36  
 Description by A. J. H. date 3/20/36 checked by G. F. R. date 3/20/36





Sheet 1 of 2 Sheets















UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
DIVISION OF RESEARCH

\* Indicates storms for which rainfall and runoff analysis sheets were made.

MONTH Jan., 19 37  
SHEET 1 OF 9 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

PROJECT Zanesville, Ohio

| WATERSHED    |                 | RAINFALL |                 |                       |                    | TEMPERATURE (Degrees F.)       |                                 | RUN-OFF                         |  |                     |                     | RAINFALL MOVES<br>Inches | Silt Loss<br>(tons per acre) | CONDITION OF WATERSHED |                 |                 |   |   |
|--------------|-----------------|----------|-----------------|-----------------------|--------------------|--------------------------------|---------------------------------|---------------------------------|--|---------------------|---------------------|--------------------------|------------------------------|------------------------|-----------------|-----------------|---|---|
| Number       | Area<br>(acres) | Gage No. | Begin<br>(hour) | Duration<br>(minutes) | Amount<br>(inches) | 5 minutes<br>(inches per hour) | 15 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) | Maximum Intensity<br>(inches per hour) | Maximum<br>(inches) | Minimum<br>(inches) |                          |                              |                        | Began<br>(hour) | Ended<br>(hour) | Amount<br>(inches)  | Maximum Rate<br>Cu. ft. sec.                                      |
| (1)          | (2)             | (3)      | (4)             | (5)                   | (6)                | (7)                            | (8)                             | (9)                             | (10)                                   | (11)                | (12)                | (13)                     | (14)                         | (15)                   | (16)            | (17)            | (18)  |   |
| Jan. 2       | -               | -        | A. E. Std       | 3:45A                 | 300                | 0.28                           | 0.12                            | 0.12                            | 0.12                                   | 53                  | 30                  | 4:37A (Cult.)<br>1-3     | 0.03                         | 6:05A<br>1-2           |                 |                 | All areas not frozen in Jan.  |   |
| Jan. 2       | Cult.           |          | "               | 8:53P                 | 67                 |                                | 0.72                            | 0.28                            | 0.16                                   |                     |                     | 12:20A                   | 0.12                         | 9:03P                  | 0.16            | 0.096           | Rainfall and Runoff both<br>Jan. 2-Rains                            |   |
| "            | Past.           |          | "               | "                     | "                  |                                | "                               | "                               | "                                      |                     |                     | No Runoff                | 0.02                         |                        | 0.26            | -               |   |   |
| "            | Woods           |          | "               | "                     | "                  |                                | "                               | "                               | "                                      |                     |                     | 1-17 1-8                 |                              |                        |                 |                 |   |   |
| Jan. 7       | Cult.           |          | "               | 1:00A                 | 13 hr.             | 0.11                           | 0.16                            | 0.16                            | 0.16                                   | 19                  | 27                  | 2:22A 8:30A              | 0.09                         | 8:35A                  | 0.21            | 0.210           |   |   |
| "            | Past.           |          | "               | 1:00A                 | "                  | "                              | "                               | "                               | "                                      |                     |                     | No Runoff                | 0.02                         |                        |                 | T               |   |   |
| "            | Woods           |          | "               | 1:00A                 | "                  | "                              | "                               | "                               | "                                      |                     |                     | 1-11                     |                              |                        |                 |                 |   |   |
| Jan. 9-10    | Cult.           |          | Cult. Std       | 6:00A                 | 20 hr.             | 0.87                           | 0.20                            | 0.20                            | 0.12                                   | 54                  | 36                  | 6:45A 4:00A              | 0.62                         | 1:05A                  | 0.25            | 0.504           | Cult. W.S. in wheat about<br>2" high seeded Oct. 1936<br>on contour |   |
| "            | Past.           |          | "               | "                     | "                  | "                              | "                               | "                               | "                                      |                     |                     | 1-9 1-10                 |                              | 1-10                   |                 | 0.03            |   |   |
| "            | Woods           |          | "               | "                     | "                  | "                              | "                               | "                               | "                                      |                     |                     | 10:13A 3:28P             | 0.18                         | 1:15A                  | 0.69            | 0.003           |   |   |
| * Jan. 11-13 | Cult.           |          | Cult. Std       | 3:00A                 | 23 hr.             | 2.00                           | 1.14                            | 0.80                            | 0.60                                   | 58                  | 34                  | 5:30A 6:30A              | 1.24                         | 2:05                   | 0.76            | 5.813           | Pasture W.S. good mixed<br>grass cover about 2" high<br>in January  |   |
| "            | Past.           |          | "               | 1-14                  | "                  | "                              | "                               | "                               | "                                      |                     |                     | 1-14 1-15                |                              | 1-14                   |                 | 0.031           |   |   |
| "            | Woods           |          | "               | "                     | "                  | "                              | "                               | "                               | "                                      |                     |                     | 7:38A 10:30A             | 1.34                         | 7:01P                  | 0.66            | 0.013           |   |   |
|              |                 |          | "               | "                     | "                  | "                              | "                               | "                               | "                                      |                     |                     | 9:46A 1:20P              | 0.69                         | 10:25P                 | 1.31            |                 |   |   |
|              |                 |          | "               | "                     | "                  | "                              | "                               | "                               | "                                      |                     |                     | 1-16                     |                              |                        |                 |                 |   |   |
| Jan. 17-18   | Cult.           |          | A. E. Std       | 9:00A                 | 21 hr.             | 1.00                           | 0.24                            | 0.24                            | 0.18                                   | 13                  | 31                  | 11:05A 8:30A             | (0.77)                       | 0.45                   | 3:11A           | 0.23            | 1.047   | Woods W.S.-Second growth<br>mixed hardwoods good ground<br>litter |
| "            | Past.           |          | "               | 1-17                  | "                  | "                              | "                               | "                               | "                                      |                     |                     | 1-17 1-19                |                              | 1-18                   |                 | 0.011           |   |   |
| "            | Woods           |          | "               | "                     | "                  | "                              | "                               | "                               | "                                      |                     |                     | 8:05P 7:06P              | (0.57)                       | 0.45                   | 3:54A           | 0.43            |   |   |
|              |                 |          | "               | "                     | "                  | "                              | "                               | "                               | "                                      |                     |                     | 1-18                     |                              |                        |                 |                 |   |   |
|              |                 |          | "               | "                     | "                  | "                              | "                               | "                               | "                                      |                     |                     | 2:00A 11:30P             | (0.16)                       | 0.04                   | 5:50A           | 0.84            | 0.001   |   |
| Jan. 20      | -               | -        | Cult. Std       | 5:00A                 | 120                | 3.15                           | 0.48                            | 0.32                            | 0.28                                   | 37                  | 25                  | 1-18 1-18                |                              |                        |                 |                 |   |   |
| Jan. 20-21   | -               | -        | Cult. Std       | 7:00P                 | 12 hr.             | 1.44                           | 0.60                            | 0.60                            | 0.40                                   | 45                  | 32                  |                          |                              |                        |                 |                 |   |   |
| Jan. 21-22   | -               | -        | "               | 1-21                  | "                  |                                | 0.26                            | 0.26                            | 0.26                                   | 51                  | 36                  |                          |                              |                        |                 |                 |   |   |
|              |                 |          | "               | 3:00P                 | 15 hr.             |                                |                                 |                                 |  |                     |                     |                          |                              |                        |                 |                 |   |   |
| Jan. 22-23   | Cult.           |          | "               | 12:30P                | 450                | 0.33                           | 0.16                            | 0.16                            | 0.12                                   | 40                  | 26                  | 10:00A 11:34A            | (2.71)                       | 2.99                   | 2:53A           | 0.144           | 4.516   |   |
| "            | Past.           |          | "               | 1-22                  | "                  | 0.33                           | "                               | "                               | "                                      |                     |                     | 1-20 1-23                |                              | 1-21                   |                 |                 |   |   |
| "            | Woods           |          | "               | "                     | "                  | 0.33                           | "                               | "                               | "                                      |                     |                     | 11:00A 8:30P             | (2.32)                       | 0.77                   | 10:50P          | 0.83            | 0.025   |   |
|              |                 |          | "               | "                     | "                  |                                | "                               | "                               | "                                      |                     |                     | 1-20 1-23                |                              | 1-21                   |                 |                 |   |   |
|              |                 |          | "               | "                     | "                  |                                | "                               | "                               | "                                      |                     |                     | 4:00P 9:45P              | (1.03)                       | 0.14                   | 11:11P          | 2.12            | 0.005   |   |
|              |                 |          | "               | "                     | "                  |                                | "                               | "                               | "                                      |                     |                     | 1-20 1-23                |                              | 1-21                   |                 |                 |   |   |
| Jan. 22-23   | Snow            |          |                 |                       |                    | 2.40                           | 7 hours                         | Snow after above rain           |  |                     |                     |                          |                              |                        |                 |                 |   |   |
| Jan. 24-25   | Cult.           |          | Cult. Std       | 8:20A                 | 17 hr.             | 1.35                           | 0.80                            | 0.44                            | 0.44                                   | 37                  | 23                  | 1-24 1-26                |                              | 1-24                   | 0.10            | 0.747           |   |   |
|              |                 |          |                 |                       |                    |                                |                                 |                                 |  |                     |                     | 8:20A 11:59P             | (2.30)                       | 1.79                   | 11:55A          |                 |   |   |



UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH \_\_\_\_\_, 19 37  
 SHEET 2 OF 9 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

 PROJECT Zanesville, Ohio

| Date       | WATERSHED |              | RAINFALL |              |                    |                 |                             | TEMPERATURE (degrees F.)     |                              |         | RUN-OFF |              |              |                 | RAINFALL MONDS (inches) | Silt Loss (tons per acre) | CONDITION OF WATERSHED |              |      |
|------------|-----------|--------------|----------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|---------|---------|--------------|--------------|-----------------|-------------------------|---------------------------|------------------------|--------------|------|
|            | Number    | Area (acres) | Oage No. | Begin (hour) | Duration (minutes) | Amount (inches) | MAXIMUM INTERMITT           |                              |                              | Maximum | Minimum | Begin (hour) | Ended (hour) | Amount (inches) |                         |                           |                        | MAXIMUM RATE |      |
|            |           |              |          |              |                    |                 | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |         |         |              |              |                 |                         |                           |                        | Cu. ft. sec  | Time |
| (1)        | (2)       | (3)          | (4)      | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)    | (12)    | (13)         | (14)         | (15)            | (16)                    | (17)                      | (18)                   |              |      |
| Jan. 21-25 | Past.     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| "          | Woods     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| Jan. 31    | Culte.    |              |          | 4 AM         | 360                | 0.34            | 0.08                        | 0.08                         | 0.08                         | 49      | 30      |              |              |                 |                         |                           |                        |              |      |
| "          | Past.     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| "          | Woods     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| Feb. 8     | Culte.    |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| "          | Past.     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| "          | Woods     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| Feb. 8     | Culte.    |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| "          | Past.     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| "          | Woods     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| Feb. 14    | Culte.    |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| "          | Past.     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| "          | Woods     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| Feb. 16    | "         | Snow         |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| Feb. 18    | "         | "            |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| Feb. 20    | "         | "            |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| Feb. 21    | Culte.    | Rain & Snow  |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| "          | Past.     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| "          | Woods     |              |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| Mar. 4     | "         | "            |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |
| Mar. 10    | "         | Snow         |          |              |                    |                 |                             |                              |                              |         |         |              |              |                 |                         |                           |                        |              |      |

Ground frozen 4"

Wheat 2" high Cult. W. S.

Ground frozen 1"

Wheat 2" high





UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH 1937  
 SHEET 3 OF 9 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

Project Zanesville, Ohio

| WATERSHED  |        |                 | RAINFALL   |                 |                       |                    | TEMPERATURES<br>(degrees F.)   |                                 |                                 | RUN-OFF |                |                        |                      | RAINFALL METERS<br>Runoff<br>(inches) | Soil Loss<br>(tons per acre) | CONDITION OF WATERSHED |                      |   |
|------------|--------|-----------------|------------|-----------------|-----------------------|--------------------|--------------------------------|---------------------------------|---------------------------------|---------|----------------|------------------------|----------------------|---------------------------------------|------------------------------|------------------------|----------------------|---|
| Date       | Number | Area<br>(acres) | Gage No.   | Began<br>(hour) | Duration<br>(minutes) | Amount<br>(inches) | MAXIMUM INTENSITY              |                                 |                                 | Maximum | Minimum        | Began<br>(hour)        | Ended<br>(hour)      | Amount<br>(inches)                    | MAXIMUM RATE                 |                        |                      |   |
|            |        |                 |            |                 |                       |                    | 4 minutes<br>(inches per hour) | 15 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) |         |                |                        |                      |                                       | Cu. ft. sec.                 |                        | Time                 |   |
| (1)        | (2)    | (3)             | (4)        | (5)             | (6)                   | (7)                | (8)                            | (9)                             | (10)                            | (11)    | (12)           | (13)                   | (14)                 | (15)                                  | (16)                         | (17)                   | (18)                 |   |
| Mar. 13-14 |        | Snow            | " "        | 3-13<br>6:30 P  | 18 hr.                | 0.11               | -                              | -                               | -                               | 40      | 23             |                        |                      | No Runoff                             |                              |                        |                      |   |
| Mar. 14-15 |        | Snow            | " "        | " "             | " "                   | 0.05               | -                              | -                               | -                               | 32      | 23             |                        |                      | No Runoff                             |                              |                        |                      |   |
| Mar. 18    |        | Snow            | " "        | " "             | " "                   | 0.08               | -                              | -                               | -                               | 41      | 24             |                        |                      | No Runoff                             |                              |                        |                      |   |
| Mar. 20    |        |                 | " "        | 3:00A           | 20                    | 0.11               | 0.96                           | 0.36                            | 0.20                            | 53      | 33             |                        |                      | No Runoff                             |                              |                        | No frost             |   |
| Mar. 20    | Cult.  |                 | C&S Recd.  | 20 P            | 75                    | 0.37               | 2.16                           | 1.12                            | 0.60                            |         |                |                        |                      | 0.04                                  |                              | 0.33                   | 0.054                |   |
| "          | Paste  |                 | " "        | " "             | " "                   | " "                | " "                            | " "                             | " "                             |         |                |                        |                      | 0.01                                  |                              | 0.36                   | T                    |   |
| "          | Woods  |                 | " "        | " "             | " "                   | " "                | " "                            | " "                             | " "                             |         |                |                        |                      | No Runoff                             |                              |                        |                      |   |
| Mar. 24    | -      | -               | A.E. Recd. | 10:30A          | 100                   | 0.19               | 0.20                           | 0.20                            | 0.18                            | 56      | 33             |                        |                      |                                       |                              |                        |                      |   |
| Mar. 24    | Cult.  |                 | A.E. Std.  | 8:42P           | 50                    | 0.53               | 1.92                           | 0.92                            | 0.80                            |         | 8:57P<br>9:02P | 3:25<br>6:50A<br>3:30A | 0.20<br>0.19<br>0.01 | 1.30<br>0.95<br>0.01                  | 9:18P<br>9:27P<br>-          | 0.33<br>0.31<br>0.49   | 0.512<br>0.018<br>T. | Past. W. S. Grass 2-3" high                                     |
| "          | Paste  |                 | " "        | " "             | " "                   | " "                | " "                            | " "                             | " "                             |         |                |                        |                      |                                       |                              |                        |                      |   |
| "          | Woods  |                 | " "        | " "             | " "                   | " "                | " "                            | " "                             | " "                             |         |                |                        |                      |                                       |                              |                        |                      |   |
| Apr. 1     | -      | -               | A.E. Std.  | 10:00P          | 150                   | 0.10               | 0.05                           | 0.05                            | 0.05                            | 52      | 29             |                        |                      | No Runoff                             |                              |                        |                      | Wheat 3" high<br>Grass seeded with disc.<br>drill on cult. W.S. |
| Apr. 3     |        |                 | " "        | 2:30P           | 60                    | 0.07               | -                              | -                               | -                               | 51      | 33             |                        |                      | No Runoff                             |                              |                        |                      |   |
| Apr. 4     |        |                 | " "        | 6:45P           | 120                   | 0.16               | 0.08                           | 0.08                            | 0.08                            | 51      | 33             |                        |                      | No Runoff                             |                              |                        |                      |   |
| Apr. 5     |        |                 | " "        | 8:30P           | 120                   | 0.16               | 0.32                           | 0.32                            | 0.24                            | 67      | 51             |                        |                      | No Runoff                             |                              |                        |                      |   |
| Apr. 8     |        |                 | " "        | 12:15P          | 180                   | 0.14               | 0.08                           | 0.08                            | 0.04                            | 56      | 33             |                        |                      | No Runoff                             |                              |                        |                      |   |
| Apr. 8     |        |                 | " "        | 6:30P           | 125                   | 0.12               | 0.08                           | 0.08                            | 0.08                            |         |                |                        |                      | No Runoff                             |                              |                        |                      |   |
| Apr. 14    |        |                 | " "        | 10:15A          | 300                   | 0.20               | 0.24                           | 0.16                            | 0.10                            | 66      | 46             |                        |                      |                                       |                              |                        |                      |   |
| Apr. 14-15 | Cult.  |                 | " "        | 7:55P           | 285                   | 0.31               | 0.72                           | 0.32                            | 0.24                            | 64      | 50             |                        |                      | T                                     |                              | 0.31                   | T                    | Past. W. S. Grass 3-4" high                                     |
| "          | Paste  |                 | " "        | " "             | " "                   | " "                | " "                            | " "                             | " "                             |         |                |                        |                      | No Runoff                             |                              |                        |                      |   |
| "          | Woods  |                 | " "        | " "             | " "                   | " "                | " "                            | " "                             | " "                             |         |                |                        |                      | No Runoff                             |                              |                        |                      |   |
| Apr. 18    |        |                 | " "        | " "             | " "                   | 0.05               | -                              | -                               | -                               | 76      | 39             |                        |                      | No Runoff                             |                              |                        |                      |   |
| Apr. 21    | -      |                 | " "        | 3:00A           | 150                   | 0.15               | 0.36                           | 0.24                            | 0.13                            | 71      | 44             |                        |                      | No Runoff                             |                              |                        |                      |   |



UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH 19 37  
 SHEET 4 OF 9 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

PROJECT Zanesville, Ohio

S-1238

| Date       | WATERSHED |                 | RAINFALL |                   |                       |                    |                                |                                 |                                 | TEMPERATURE<br>(degrees F.) |         | RUN-OFF         |                 |                    |              | Rainfall Moves<br>Run-off<br>(inches) | Grass Loss<br>(tons per acre) | CONDITION OF WATERSHED      |
|------------|-----------|-----------------|----------|-------------------|-----------------------|--------------------|--------------------------------|---------------------------------|---------------------------------|-----------------------------|---------|-----------------|-----------------|--------------------|--------------|---------------------------------------|-------------------------------|-----------------------------|
|            | Number    | Area<br>(acres) | Gage No. | Begin<br>(hour)   | Duration<br>(minutes) | Amount<br>(inches) | MAXIMUM INTENSITY              |                                 |                                 | Maximum                     | Minimum | Began<br>(hour) | Ended<br>(hour) | Amount<br>(inches) | MAXIMUM RATE |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    | 5 minutes<br>(inches per hour) | 15 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) |                             |         |                 |                 |                    | Out ft. sec. | Time                                  |                               |                             |
| (1)        | (2)       | (3)             | (4)      | (5)               | (6)                   | (7)                | (8)                            | (9)                             | (10)                            | (11)                        | (12)    | (13)            | (14)            | (15)               | (16)         | (17)                                  | (18)                          |                             |
| Apr. 21-22 | Cult.     |                 | "        | 4:45P             |                       | 0.57               | 0.72                           | 0.40                            | 0.28                            | 72                          | 44      |                 |                 | 0.01               |              | 0.56                                  | 0.002                         |                             |
| "          | Paste     |                 | "        |                   |                       | "                  |                                |                                 |                                 |                             |         |                 |                 | No Runoff          |              |                                       |                               |                             |
| "          | Woods     |                 | "        |                   |                       | "                  |                                |                                 |                                 |                             |         |                 |                 | No Runoff          |              |                                       |                               |                             |
| Apr. 24-25 | Cult.     |                 | "        | 4:24              | 16 hrs                | 0.35               | 0.16                           | 0.16                            | 0.12                            | 79                          | 41      |                 |                 | No Runoff          |              | 0.35                                  | T                             |                             |
| "          | Paste     |                 | "        | 3:45P             | "                     | "                  | "                              | "                               | "                               | "                           | "       |                 |                 | No Runoff          |              |                                       |                               |                             |
| "          | Woods     |                 | "        | "                 | "                     | "                  | "                              | "                               | "                               | "                           | "       |                 |                 | No Runoff          |              |                                       |                               |                             |
| Apr. 26-27 | Cult.     |                 | "        | 4:26              | 120                   | 0.42               | 0.24                           | 0.20                            | 0.16                            | 52                          | 40      |                 |                 | 0.02               |              | 0.40                                  | T                             |                             |
| "          | Paste     |                 | "        | 5:45P             | "                     | "                  | "                              | "                               | "                               | "                           | "       |                 |                 | No Runoff          |              |                                       |                               |                             |
| "          | Woods     |                 | "        | "                 | "                     | "                  | "                              | "                               | "                               | "                           | "       |                 |                 | No Runoff          |              |                                       |                               |                             |
| Apr. 27    |           |                 | "        | 2:00P             | 15                    | 0.04               | -                              | -                               | -                               | 55                          | 41      |                 |                 | No Runoff          |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
| May 4-5    | -         |                 | "        | -                 | -                     | 0.04               | -                              | -                               | -                               | 74                          | 53      |                 |                 | No Runoff          |              |                                       |                               | Wheat 8" high Cult. W. S.   |
| May 5-6    | -         |                 | "        | 5:5<br>12:30P     | 12 hrs                | 0.43               | 0.14                           | 0.14                            | 0.14                            | 68                          | 47      |                 |                 | No Runoff          |              |                                       |                               |                             |
| May 9      | -         |                 | "        | 1:45P             | 115                   | 0.09               | 0.06                           | 0.06                            | 0.06                            | 59                          | 48      |                 |                 |                    |              |                                       |                               |                             |
| May 12     | -         |                 | "        | A.E. Std<br>1:20P | 180                   | 0.09               | 0.24                           | 0.08                            | 0.04                            | 60                          | 49      |                 |                 |                    |              |                                       |                               | Past. W. S. Grass 6-8" high |
| May 12     |           |                 | "        | 7:20P             | 120                   | 0.22               | 0.48                           | 0.20                            | 0.10                            |                             |         |                 |                 |                    |              |                                       |                               |                             |
| May 13     | Cult.     |                 | "        | 10:30A            | 300                   | 0.69               | 0.96                           | 0.56                            | 0.52                            | 74                          | 53      |                 |                 | 0.03               |              | 0.98                                  | T                             |                             |
| "          | Paste     |                 | "        | "                 | "                     | "                  | "                              | "                               | "                               | "                           | "       |                 |                 | No Runoff          |              |                                       |                               |                             |
| "          | Woods     |                 | "        | "                 | "                     | "                  | "                              | "                               | "                               | "                           | "       |                 |                 | No Runoff          |              |                                       |                               |                             |
| May 14     | Cult.     |                 | "        | A.E. Rec<br>9:10A | 500                   | 0.48               | 0.20                           | 0.20                            | 0.16                            | 63                          | 50      | 2:55P           | 9:10P           | 0.09               |              | 0.39                                  | 0.003                         |                             |
| "          | Paste     |                 | "        | "                 | "                     | "                  | "                              | "                               | "                               | "                           | "       |                 |                 | 0.06               | 0.08         | 3:25 P                                | T                             |                             |
| "          | Woods     |                 | "        | "                 | "                     | "                  | "                              | "                               | "                               | "                           | "       |                 |                 | 0.01               |              | 0.47                                  | T                             |                             |
| May 16     | -         |                 | "        | -                 | -                     | 0.04               | -                              | -                               | -                               | 59                          | 45      |                 |                 | No Runoff          |              |                                       |                               |                             |
| May 18     | -         |                 | "        | Std<br>4:00P      | 300                   | 0.12               | 0.20                           | 0.20                            | 0.12                            | 69                          | 42      |                 |                 | No Runoff          |              |                                       |                               |                             |
| May 21     | -         |                 | "        | -                 | -                     | 0.02               | -                              | -                               | -                               | 67                          | 44      |                 |                 | No Runoff          |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |
|            |           |                 |          |                   |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                    |              |                                       |                               |                             |





MONTH \_\_\_\_\_, 1937  
SHEET 5 OF 9 SHEETS

# RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

PROJECT  
Zanesville, Ohio[illegible]



UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
DIVISION OF RESEARCHMONTH           , 19 37  
SHEET 6 OF 9 SHEETSPROJECT Zanesville, Ohio  
RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

| DATE       | WATERSHED |              | RAINFALL |                   |                    |                             | TEMPERATURE (degrees F.)     |                              | RUN-OFF |         |              |              | RAPID FLOW (cubic feet per second) | SILT LOSS (tons per acre) | CONDITION OF WATERSHED |                 |                              |      |
|------------|-----------|--------------|----------|-------------------|--------------------|-----------------------------|------------------------------|------------------------------|---------|---------|--------------|--------------|------------------------------------|---------------------------|------------------------|-----------------|------------------------------|------|
|            | Number    | Area (acres) | Gage No. | Peak (hour)       | Duration (minutes) | MAXIMUM INTENSITY           |                              |                              | Maximum | Minimum | Began (hour) | Ended (hour) |                                    |                           |                        | Amount (inches) | MAXIMUM RATE                 |      |
|            |           |              |          |                   |                    | 8 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |         |         |              |              |                                    |                           |                        |                 | Cu. ft. sec.                 | Time |
| (1)        | (2)       | (3)          | (4)      | (5)               | (6)                | (7)                         | (8)                          | (9)                          | (10)    | (11)    | (12)         | (13)         | (14)                               | (15)                      | (16)                   | (17)            | (18)                         |      |
| June 16-17 |           |              |          |                   |                    |                             |                              |                              |         |         |              |              |                                    |                           |                        |                 |                              |      |
| June 20-21 | Cult.     |              |          | 12:15P            | 90                 | 0.09                        | 0.12                         | 0.12                         | 0.12    | 80      | 60           | 6-21         | No Runoff                          |                           |                        |                 |                              |      |
| "          | Past.     |              |          | 11:15P            | 20-570             | 2.00                        | 1.36                         | 1.36                         | 1.08    | 78      | 60           | 12:55A       |                                    | 2.30                      | 4 AM                   |                 | Past. W. S. Grass 8-10" high |      |
| "          | Woods     |              |          |                   |                    |                             |                              |                              |         |         |              | 12:10A       |                                    | 2.00                      | 1:05A                  |                 |                              |      |
|            |           |              |          |                   |                    |                             |                              |                              |         |         |              | 3:50A        |                                    | 0.04                      | 4:20A                  |                 |                              |      |
| June 21    | Cult.     |              |          | 12:10P            | 45                 | 1.17                        | 4.32                         | 3.44                         | 2.26    | 84      | 64           |              |                                    |                           | 8.90                   | 12:58P          |                              |      |
| "          | Past.     |              |          |                   |                    |                             |                              |                              |         |         |              |              |                                    | 6.80                      | 1:00P                  |                 |                              |      |
| "          | Woods     |              |          |                   |                    |                             |                              |                              |         |         |              |              |                                    | 1.30                      | 1:08P                  |                 |                              |      |
| June 21    | Cult.     |              |          | 3:00P             | 30                 | 0.21                        | 1.20                         | 0.64                         | 0.40    |         |              | 6-22         |                                    | 1.88                      | 1:05                   | 3:04P           | 0.428                        |      |
| "          | Past.     |              |          |                   |                    |                             |                              |                              |         |         |              | 1:00P        |                                    | 1.66                      | 3:15P                  | 0.024           |                              |      |
| "          | Woods     |              |          |                   |                    |                             |                              |                              |         |         |              | Noon-22      |                                    | 0.75                      |                        | 0.017           |                              |      |
|            |           |              |          |                   |                    |                             |                              |                              |         |         |              | 6 PM-22      |                                    |                           |                        |                 |                              |      |
| June 25    |           |              |          | 6:25A             | 120                | 0.08                        | 0.12                         | 0.12                         | 0.08    | 80      | 63           |              | No Runoff                          |                           |                        |                 |                              |      |
| June 30    |           |              |          | 3:06P             | 30                 | 0.12                        | 1.08                         | 0.40                         | 0.24    | 79      | 56           |              | No Runoff                          |                           |                        |                 | Wheat 36" high               |      |
| July 2-3   | Cult.     |              |          | 7:00A             | 120                | 0.53                        | 2.04                         | 1.04                         | 0.58    | 71      | 52           |              |                                    | 0.02                      |                        | 0.51            | 0.003                        |      |
| "          | Past.     |              |          |                   |                    |                             |                              |                              |         |         |              |              | No Runoff                          |                           |                        |                 |                              |      |
| "          | Woods     |              |          |                   |                    |                             |                              |                              |         |         |              |              | No Runoff                          |                           |                        |                 |                              |      |
| July 5     |           |              |          | 7:15A             | 180                | 0.09                        | 0.12                         | 0.08                         | 0.08    | 77      | 62           |              | No Runoff                          |                           |                        |                 | Wheat cut                    |      |
| July 11    |           |              |          | Std. P.M.         | -                  | 0.06                        | -                            | -                            | -       |         |              |              | No Runoff                          |                           |                        |                 |                              |      |
| July 11    |           |              |          | 7:58P             | 10                 | 0.03                        | -                            | -                            | -       |         |              |              | No Runoff                          |                           |                        |                 |                              |      |
| July 13    |           |              |          | 10:20A            | 10                 | 0.07                        | -                            | -                            | -       | 89      | 67           |              | No Runoff                          |                           |                        |                 |                              |      |
| July 13-14 |           |              |          | Recd. 5:15P-13-14 | hr 0.45            | 1.08                        | 0.36                         | 0.20                         | 0.20    | 86      | 68           |              | No Runoff                          |                           |                        |                 |                              |      |
| July 14    |           |              |          | 5:20P             | 50                 | 0.12                        | 0.48                         | 0.36                         | 0.18    | 83      | 69           |              | No Runoff                          |                           |                        |                 | Past. W. S. Grass 8" high    |      |
| July 15-16 | Cult.     |              |          | 7:15A             | 215                | 0.52                        | 1.20                         | 0.64                         | 0.32    | 88      | 69           |              | T                                  |                           |                        | 0.52            | T.                           |      |
| "          | Past.     |              |          |                   |                    |                             |                              |                              |         |         |              |              | No Runoff                          |                           |                        |                 |                              |      |
| "          | Woods     |              |          |                   |                    |                             |                              |                              |         |         |              |              | No Runoff                          |                           |                        |                 |                              |      |
| July 16-17 | Cult.     |              |          | Std. 3:25P-16-17  | hr 0.83            | 1.92                        | 0.72                         | 0.36                         | 0.36    | 90      | 66           |              | 0.09                               |                           |                        | 0.74            | 0.009                        |      |
| "          | Past.     |              |          |                   |                    |                             |                              |                              |         |         |              |              | No Runoff                          |                           |                        |                 |                              |      |
| "          | Woods     |              |          |                   |                    |                             |                              |                              |         |         |              |              | No Runoff                          |                           |                        |                 |                              |      |





UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH           , 1937  
 SHEET 7 OF 9 SHEETS

 PROJECT Zanesville, Ohio  
 RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

| DATE      | WATERSHED |                 | RAINFALL  |                 |                       |                    |                                |                                 | TEMPERATURE (degrees F.)        |         | RUN-OFF |                 |                 |                    | RAINFALL MINUS<br>Run-off<br>(inches) | Soil Loss<br>(tons per acre) | CONDITION OF WATERSHED |  |      |
|-----------|-----------|-----------------|-----------|-----------------|-----------------------|--------------------|--------------------------------|---------------------------------|---------------------------------|---------|---------|-----------------|-----------------|--------------------|---------------------------------------|------------------------------|------------------------|--|------|
|           | Number    | Area<br>(acres) | Gage No.  | Began<br>(hour) | Duration<br>(minutes) | Amount<br>(inches) | MAXIMUM INTENSITY              |                                 |                                 | Maximum | Minimum | Began<br>(hour) | Ended<br>(hour) | Amount<br>(inches) |                                       |                              |                        | MAXIMUM RATE                             |      |
|           |           |                 |           |                 |                       |                    | 5 minutes<br>(inches per hour) | 15 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) |         |         |                 |                 |                    |                                       |                              |                        | Cu. ft. sec.                             | Time |
|           |           |                 |           |                 |                       |                    |                                |                                 |                                 |         |         |                 |                 |                    |                                       |                              |                        |  |      |
| (1)       | (2)       | (3)             | (4)       | (5)             | (6)                   | (7)                | (8)                            | (9)                             | (10)                            | (11)    | (12)    | (13)            | (14)            | (15)               | (16)                                  | (17)                         | (18)                   | (19)                                     |      |
| July 17   | Cult.     |                 | "         | 3:10P           | 7                     | 0.31               | 1.80                           | 0.72                            | 0.36                            | 90      | 65      |                 |                 | 0.08               |                                       | 0.23                         | 0.016                  |  |      |
| "         | Paste     |                 | "         | "               | "                     | "                  | "                              | "                               | "                               |         |         |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| "         | Woods     |                 | "         | "               | "                     | "                  | "                              | "                               | "                               |         |         |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| July 25   | -         |                 | A.F. Std  | 5:00P           | 75                    | 0.11               | -                              | -                               | -                               | 89      | 64      |                 |                 | No Runoff          |                                       |                              |                        | Paste. W. S. Grass 7-8" high             |      |
|           |           |                 |           |                 |                       |                    |                                |                                 |                                 |         |         |                 |                 |                    |                                       |                              |                        |  |      |
| Aug. 6    |           |                 | "         | A. M.           | -                     | 0.06               | -                              | -                               | -                               | 87      | 65      |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| Aug. 6    |           |                 | "         | 4:10P           | 35                    | 0.16               | 0.60                           | 0.36                            | 0.22                            |         |         |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| Aug. 7    |           |                 | "         | 5:42P           | 30                    | 0.13               | 2.64                           | 1.40                            | 0.76                            | 85      | 64      |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| Aug. 8    |           |                 | "         | 2:35A           | 60                    | 0.14               | 0.36                           | 0.16                            | 0.12                            | 85      | 64      |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| Aug. 8-9  |           |                 | "         | 7:05-8:510      | 510                   | 0.12               | 0.96                           | 0.56                            | 0.28                            | 86      | 65      |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| Aug. 9    | Cult.     |                 | Cult. Std | 3:55P           | 21                    | 0.64               | 3.18                           | 2.04                            | 1.28                            | 87      | 67      | 4:10P           | 6:00P           | 0.09               | 1.61                                  | 4:18P                        | 0.55                   |  |      |
| "         | Paste     |                 | No Runoff | No Runoff       |                       |                    |                                |                                 |                                 |         |         |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| "         | Woods     |                 | No Runoff | No Runoff       |                       |                    |                                |                                 |                                 |         |         |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| Aug. 9-10 | Cult.     |                 | Cult. Std | 7:57P           | 10hr.                 | 0.74               | 1.88                           | 0.92                            | 0.70                            | 85      | 67      | 4:10A           | 8:00A           | 0.13               | 1.05                                  | 4:25A                        | 0.61                   | Rain 9th P. M. and 9 & 10<br>(Soil loss) |      |
| "         | Paste     |                 | "         | "               | "                     | "                  | "                              | "                               | "                               |         |         |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| "         | Woods     |                 | "         | "               | "                     | "                  | "                              | "                               | "                               |         |         |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| Aug. 10   | Cult.     |                 | "         | 2:10P           | 65                    | 0.26               | 1.56                           | 0.72                            | 0.38                            | 83      | 67      |                 |                 | 0.06               |                                       | 0.20                         | 0.004                  |  |      |
| "         | Paste     |                 | "         | "               | "                     | "                  | "                              | "                               | "                               |         |         |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| "         | Woods     |                 | "         | "               | "                     | "                  | "                              | "                               | "                               |         |         |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| Aug. 21   | -         | -               | "         | 9:25A           | 90                    | 0.28               | 1.56                           | 0.68                            | 0.34                            | 92      | 71      |                 |                 |                    |                                       |                              |                        | Cult. W. S. Meadow 6" to 16" high        |      |
| Aug. 21   | Cult.     |                 | "         | 6:05P           | 100                   | 0.70               | 1.08                           | 0.92                            | 0.68                            |         |         |                 |                 | 0.06               |                                       |                              | 0.003                  | Runoff and Soil loss from both rains     |      |
| "         | Paste     |                 | "         | "               | "                     | "                  | "                              | "                               | "                               |         |         |                 |                 |                    |                                       |                              |                        | Paste. W. S. Grass 5-6" high             |      |
| "         | Woods     |                 | "         | "               | "                     | "                  | "                              | "                               | "                               |         |         |                 |                 |                    |                                       |                              |                        |  |      |
|           |           |                 |           |                 |                       |                    |                                |                                 |                                 |         |         |                 |                 |                    |                                       |                              |                        |  |      |
| Sept. 3   | -         | -               | A.F. Std  | 2:52P           | 16                    | 0.25               | 1.44                           | 0.72                            | 0.50                            | 89      | 70      |                 |                 | No Runoff          |                                       |                              |                        | Paste. W. S. Grass 4" high               |      |
| Sept. 4-5 |           |                 | "         | Std. 4:55P      | 18hr.                 | 0.96               | 0.18                           | 0.10                            | 0.36                            | 91      | 66      |                 |                 | No Runoff          |                                       |                              |                        |  |      |
| Sept. 19  |           |                 | "         | -               | -                     | 0.06               | -                              | -                               | -                               | 68      | 39      |                 |                 | No Runoff          |                                       |                              |                        | Cult. W. S. Meadow 12" high              |      |

SEPTEMBER



UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH           , 1937  
 SHEET 8 OF 9 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

PROJECT Zaneville, Ohio

-1293

| DATE       | WATERSHED           |                 | RAINFALL         |                  |                       |                    |                                |                                 |                                 | TEMPERATURE<br>(degrees F.) |         | RUN-OFF         |                 |                                |              | RAINFALL MINUS<br>(inches) | Silt Loss<br>(tons per acre) | CONDITION OF WATERSHED      |      |
|------------|---------------------|-----------------|------------------|------------------|-----------------------|--------------------|--------------------------------|---------------------------------|---------------------------------|-----------------------------|---------|-----------------|-----------------|--------------------------------|--------------|----------------------------|------------------------------|-----------------------------|------|
|            | Number              | Area<br>(acres) | Gage No.         | Begin<br>(hour)  | Duration<br>(minutes) | Amount<br>(inches) | MAXIMUM INTENSITY              |                                 |                                 | Maximum                     | Minimum | Began<br>(hour) | Ended<br>(hour) | Amount<br>(inches)             | MAXIMUM RATE |                            |                              |                             |      |
|            |                     |                 |                  |                  |                       |                    | 6 minutes<br>(inches per hour) | 15 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) |                             |         |                 |                 |                                | Cu. ft. sec. |                            |                              |                             | Time |
|            |                     |                 |                  |                  |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                                |              |                            |                              |                             |      |
| (1)        | (2)                 | (3)             | (4)              | (5)              | (6)                   | (7)                | (8)                            | (9)                             | (10)                            | (11)                        | (12)    | (13)            | (14)            | (15)                           | (16)         | (17)                       | (18)                         | (19)                        |      |
| Sept. 25   |                     |                 | " "              | 6:25P            | 180                   | 0.15               | 0.20                           | 0.20                            | 0.12                            | 86                          | 56      |                 |                 | No Runoff                      |              |                            |                              |                             |      |
|            |                     |                 |                  |                  |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                                |              |                            |                              |                             |      |
| Oct. 3     |                     |                 | " "              | Noon             | 180                   | 0.25               | 0.36                           | 0.16                            | 0.10                            | 75                          | 54      |                 |                 | No Runoff                      |              |                            |                              | Past. W. S. Grass 3-4" high |      |
| Oct. 5     | Cult. & Past. Woods |                 | Cult. Std. 23M   |                  | 330                   | 0.75               | 1.44                           | 1.00                            | 0.54                            | 70                          | 57      |                 |                 | 0.02<br>No Runoff<br>No Runoff | 0.73         | 1.0                        |                              |                             |      |
|            |                     |                 |                  |                  |                       |                    |                                |                                 |                                 |                             |         |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Oct. 6     | "                   | "               | A. E. Std.       | 8:07P            | 10                    | 0.12               | 0.72                           | 0.36                            | 0.20                            | 76                          | 61      |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Oct. 9     | "                   | "               | " "              | 10:30A           | 10hr.                 | 0.36               | 0.12                           | 0.12                            | 0.10                            | 56                          | 35      |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Oct. 11    | "                   | "               | " "              | A. M.            | "                     | 0.04               | "                              | "                               | "                               | 53                          | 40      |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Oct. 11    | "                   | "               | " "              | 7:20P            | 120                   | 0.11               | 0.36                           | 0.24                            | 0.12                            |                             |         |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Oct. 12    | "                   | "               | " "              | 4:35P            | 210                   | 0.20               | 0.24                           | 0.12                            | 0.10                            | 61                          | 44      |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Oct. 18-19 | Cult. & Past. Woods |                 | Cult. Std. 3:00A | 18-12hr.         | 1.13                  | 0.60               | 0.32                           | 0.32                            | 0.26                            | 62                          | 44      |                 |                 | 0.02<br>No Runoff<br>No Runoff | 1.11         | 1.0                        |                              |                             |      |
|            |                     |                 | " "              | " "              | " "                   | " "                | " "                            | " "                             | " "                             |                             |         |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Oct. 19    | "                   | "               | A. E. Std.       | P. M.            | "                     | 0.08               | "                              | "                               | "                               | 59                          | 50      |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Oct. 22    | "                   | "               | " "              | 3 A. M.          | 11 hr.                | 0.44               | 0.08                           | 0.08                            | 0.08                            | 60                          | 40      |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Oct. 22    | "                   | "               | " "              | 8 P. M.          | 300                   | 0.08               | "                              | "                               | "                               |                             |         |                 |                 | No Runoff                      |              |                            |                              |                             |      |
|            |                     |                 |                  |                  |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                                |              |                            |                              |                             |      |
|            |                     |                 |                  |                  |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                                |              |                            |                              |                             |      |
|            |                     |                 |                  |                  |                       |                    |                                |                                 |                                 |                             |         |                 |                 |                                |              |                            |                              |                             |      |
| Nov. 5     | "                   | "               | " "              | 8 A. M.          | 120                   | 0.08               | "                              | "                               | "                               | 50                          | 25      |                 |                 | No Runoff                      |              |                            |                              | Past. W. S. Grass 3" high   |      |
| Nov. 5     | "                   | "               | " "              | 5 P. M.          | 240                   | 0.07               | "                              | "                               | "                               |                             |         |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Nov. 8     | "                   | "               | " "              | 4:15P            | 375                   | 0.32               | 0.96                           | 0.40                            | 0.20                            | 65                          | 43      |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Nov. 12    | "                   | "               | A. E. Rec.       | 6 P. M.          | 270                   | 0.23               | 0.05                           | 0.05                            | 0.05                            | 48                          | 31      |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Nov. 14-15 | "                   | "               | " "              | 6 P. M.-14-16hr. | 0.12                  | "                  | "                              | "                               | "                               | 48                          | 36      |                 |                 | No Runoff                      |              |                            |                              |                             |      |
| Nov. 18-19 | "                   | Snow            | " Std.           | 6 P. M.-18-20hr. | 0.11                  | "                  | "                              | "                               | "                               | 34                          | 25      |                 |                 | No Runoff                      |              |                            |                              |                             |      |





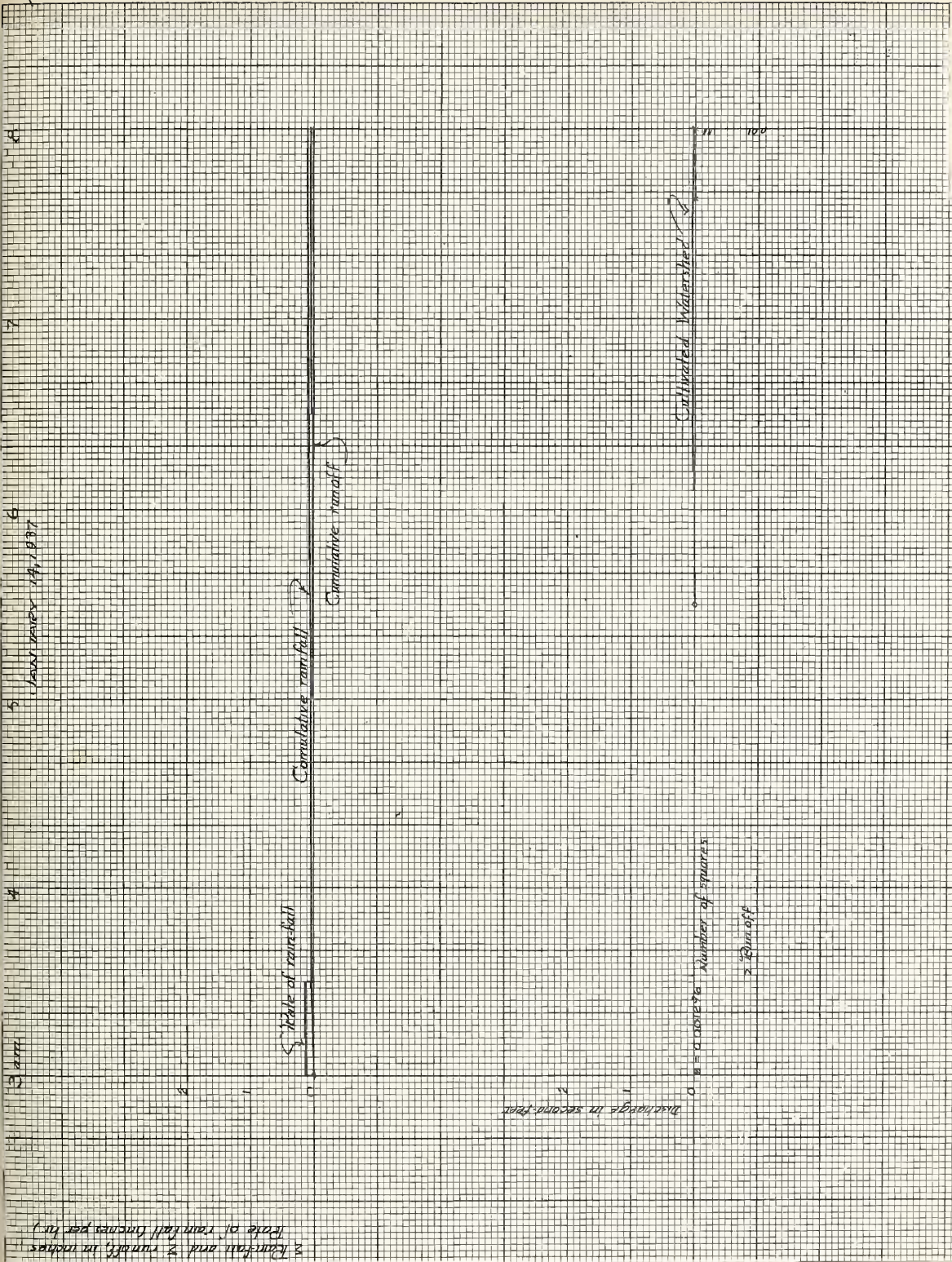
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
DIVISION OF RESEARCHMONTH 19 37SHEET 9 OF 9 SHEETSPROJECT Zanesville, Ohio  
RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

| DATE          | WATERSHED |              | RAINFALL   |              |                    |                 |                             |                              | TEMPERATURE (degrees F.)     |         |         | RUN-OFF      |              |                                |                   | RAINFALL MINUS RUN-OFF (inches) | Silt Loss (tons per acre) | CONDITION OF WATERBARR      |  |
|---------------|-----------|--------------|------------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|---------|---------|--------------|--------------|--------------------------------|-------------------|---------------------------------|---------------------------|-----------------------------|--|
|               | Number    | Area (acres) | Gage No.   | Begin (hour) | Duration (minutes) | Amount (inches) | MAXIMUM INTENSITY           |                              |                              | Maximum | Minimum | Began (hour) | Ended (hour) | Amount (inches)                | MAXIMUM RATE      |                                 |                           |                             |  |
|               |           |              |            |              |                    |                 | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |         |         |              |              |                                | Cu. ft. sec.      |                                 |                           |                             | Time   |
| (1)           | (2)       | (3)          | (4)        | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)    | (12)    | (13)         | (14)         | (15)                           | (16)              | (17)                            | (18)                      | (19)                        |  |
| Nov. 27       | -         | -            | " "        | 4:50A        | 180                | 0.09            | -                           | -                            | -                            | 50      | 40      |              |              | No Runoff                      |                   |                                 |                           |                             |  |
|               |           |              |            |              |                    |                 |                             |                              | DECEMBER                     |         |         |              |              |                                |                   |                                 |                           |                             |  |
| Dec. 4        |           |              | " "        | -            | -                  | 0.05            | -                           | -                            | -                            | 44      | 18      |              |              | No Runoff                      |                   |                                 |                           | Pasta W. S. Grass 2-3" high |  |
| Dec. 15-16    | -         |              | " "        | 10 P.M.      | 240                | 0.20            | 0.08                        | 0.08                         | 0.08                         | 39      | 21      |              |              | Trace of Runoff on Cult. W. S. | None on other two |                                 |                           |                             |  |
| Dec. 16-17-18 | Cult.     |              | Cult. Std. | PM-16-43     | hr+2.51            | 0.36            | 0.28                        | 0.18                         | 0.18                         | 39      | 30      |              |              | A.M. 17th AM 18th              | 0.34              | 0.07                            | 7A. M. 18-2.17            | 0.006                       | Long continued low intensity rain producing low stages of runoff and comparatively low total runoff-therefore not analyzed |
| " "           | Pasta     |              | Pasta Std. | " "          | 2.29               | " "             | " "                         | " "                          | " "                          |         |         |              |              | 7:45A P.M. 18th                | 0.63              | 0.23                            | 7 A.M. 18th 1.66          | 0.000                       |  |
| " "           | Woods     |              | Woods Std. | " "          | 2.27               | " "             | " "                         | " "                          | " "                          |         |         |              |              | No Runoff                      |                   |                                 |                           |                             |  |
| Dec. 22       | -         | -            | A.E. Rec.  | 1:30P        | 180                | 0.14            | 0.08                        | 0.08                         | 0.08                         | 41      | 26      |              |              | No Runoff                      |                   |                                 |                           |                             |  |
| Dec. 24-25    |           |              | " Std.     | 7:00A        | 28 hr+0.16         | -               | -                           | -                            | -                            | 41      | 29      |              |              | No Runoff                      |                   |                                 |                           |                             |  |
| Dec. 27       | -         | -            | " Rec.     | 12:30P       | 360                | 0.16            | 0.06                        | 0.06                         | 0.06                         | 42      | 26      |              |              | No Runoff                      |                   |                                 |                           |                             |  |
| Dec. 31       |           |              | " "        | 7 A.M.       | 480                | 0.22            | 0.24                        | 0.20                         | 0.12                         | 44      | 34      |              |              |                                |                   |                                 |                           |                             |  |
| Dec. 31       | Cult.     |              | " "        | 7 P.M.       | 480                | 0.28            | 0.30                        | 0.20                         | 0.12                         |         |         |              |              | 3 P.M. Noon-1st                | 0.14              | 0.05                            | 10 P.M. 0.36              | 0.002                       |  |
| " "           | Pasta     |              | " "        | " "          | " "                | " "             | " "                         | " "                          | " "                          |         |         |              |              | 2 P.M. 9 A.M.                  | 0.15              | 0.11                            | 9:30PM 0.35               | 0.003                       | Both rains on December 31  |
| " "           | Woods     |              | " "        | " "          | " "                | " "             | " "                         | " "                          | " "                          |         |         |              |              | No Runoff                      |                   |                                 |                           |                             |  |





2 Runoff and 2 runoff in inches  
Rate of rainfall (inches per hr.)



January 19, 1937

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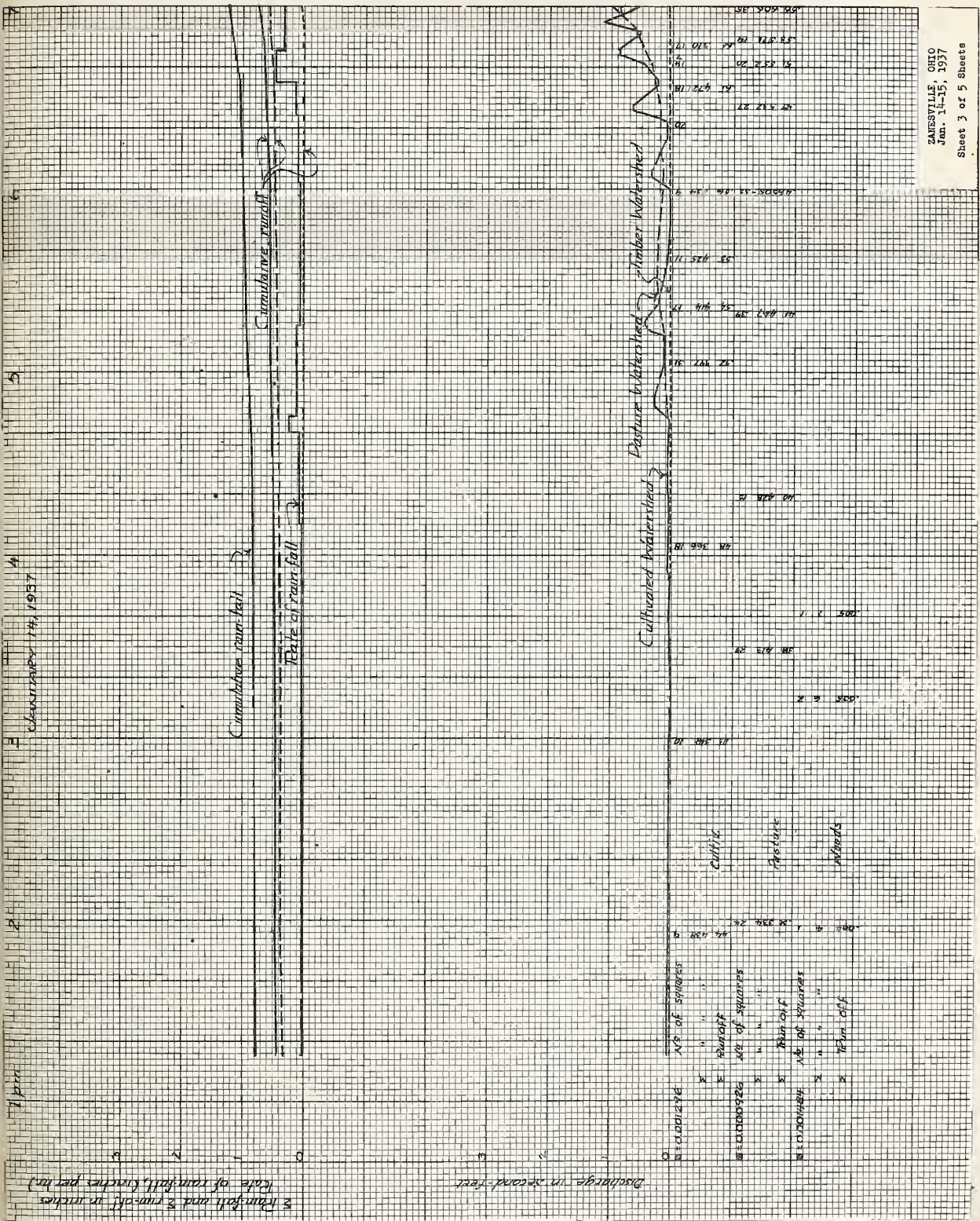












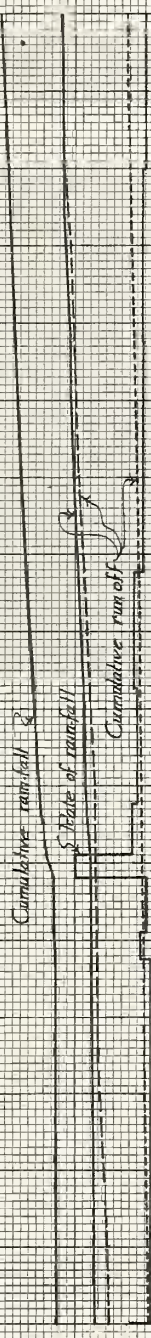
ZANESVILLE, OHIO  
 Jan. 14-15, 1957  
 Sheet 3 of 5 Sheets



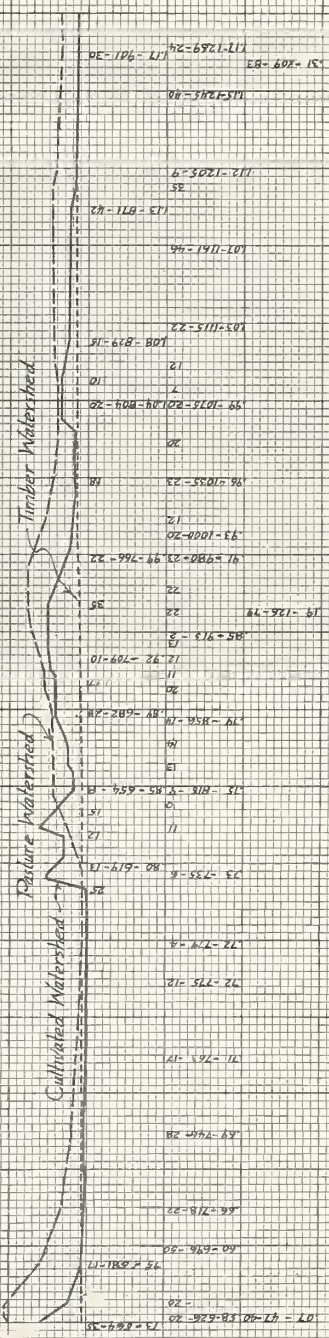


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 JANUARY 14, 1937  
 JANUARY 15

3 Rainfall and 2 Runoff (in inches)  
 4 Rate of runoff (inches per hr)



Discharge in second feet



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Rate of rainfall and  $\Sigma$  run off in inches

9 am

10

11

1 pm

2

January 12, 1937

$\Sigma$  Rate of rainfall

Cumulative rainfall  $\Sigma$

Cumulative run off

$\Sigma$  = 200 sq ft Number of squares

$\Sigma$  " " "

$\Sigma$  Run off

Cultivated Watershed

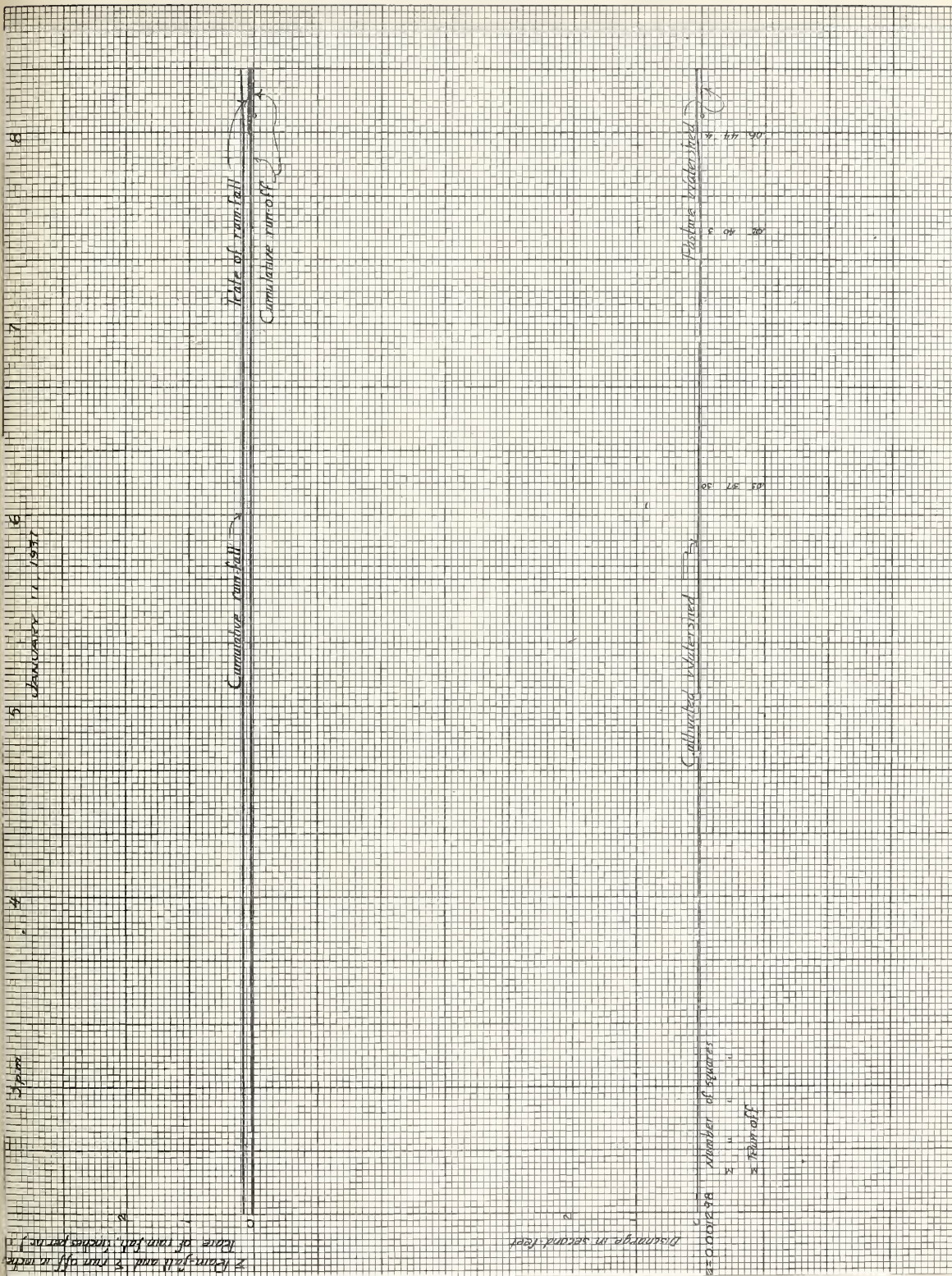
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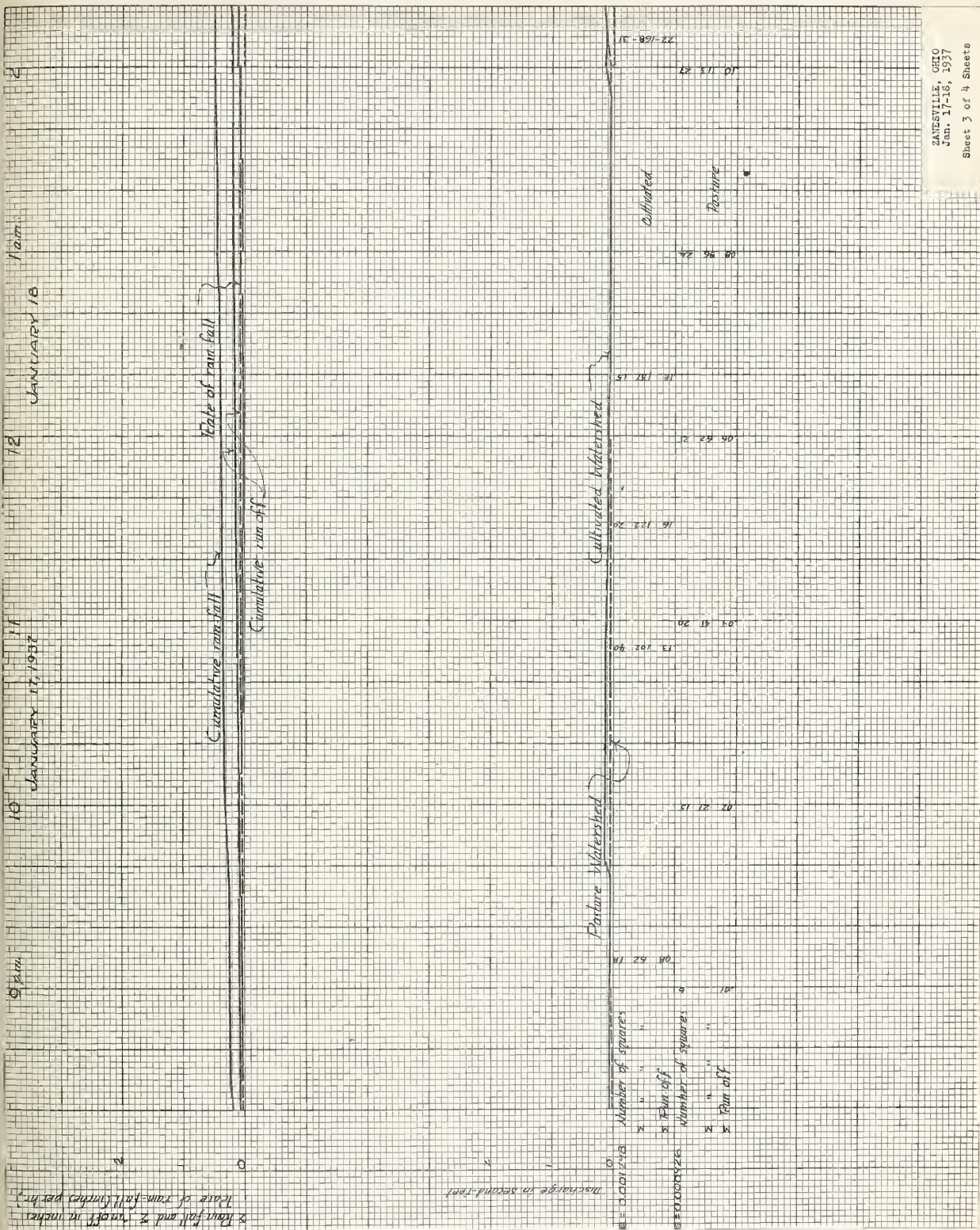






















Station

2 RAINFALL and 3 RUNOFF IN INCHES  
DATE OF RAINFALL (INCHES PER HR.)

5  
JANUARY 20, 1937

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Rate of rainfall

Cumulative rainfall

Discharge in second feet

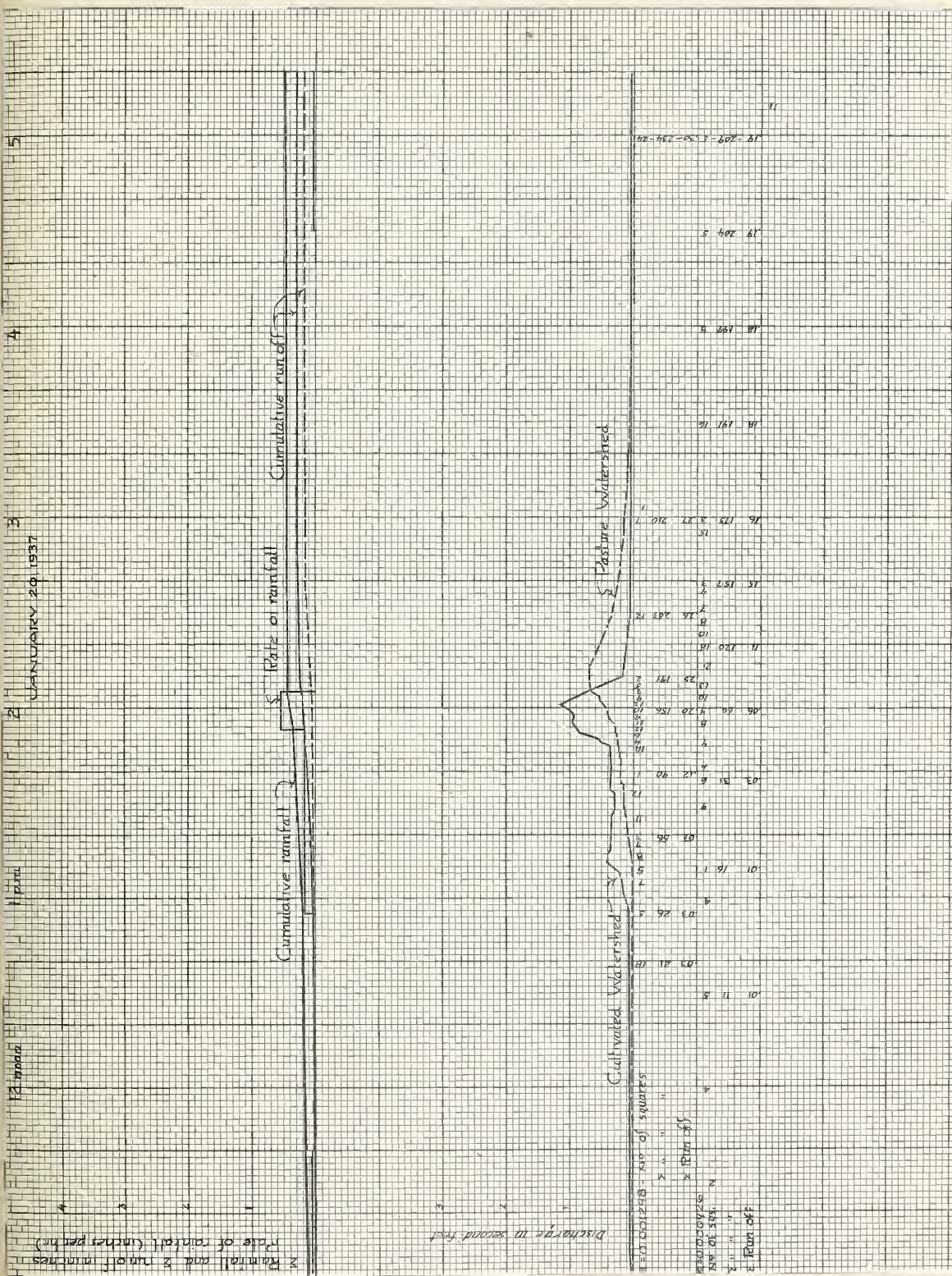
Cumulative Watershed

Number of squares

Σ Runoff

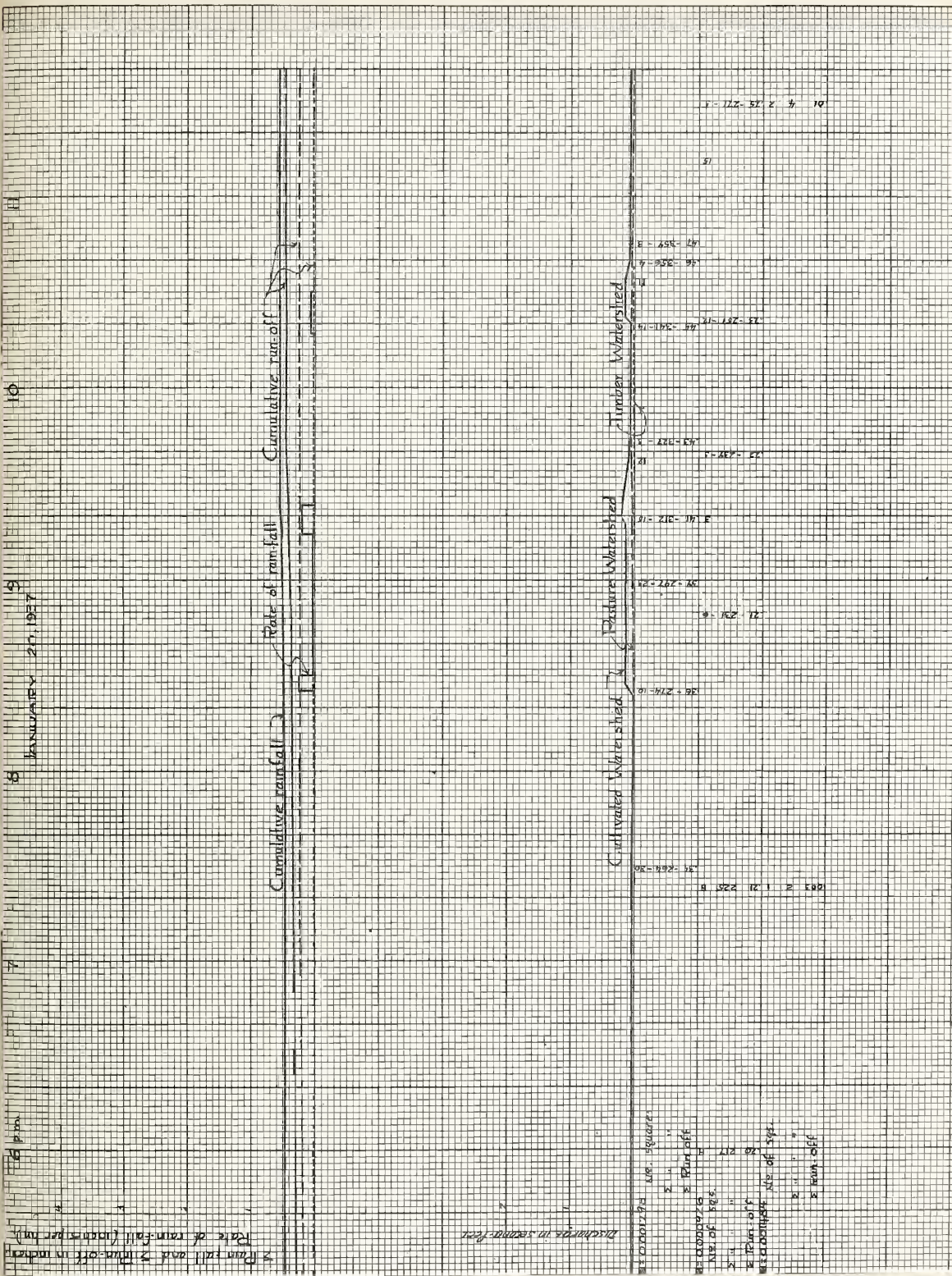












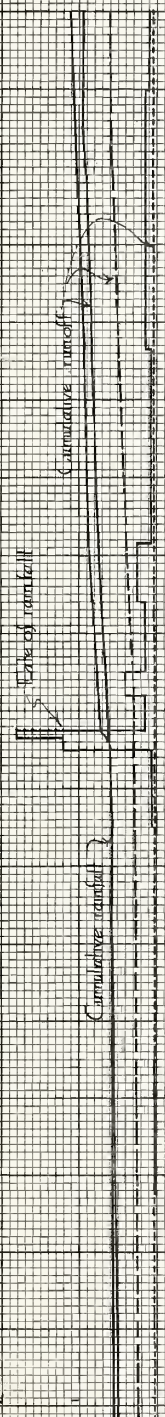




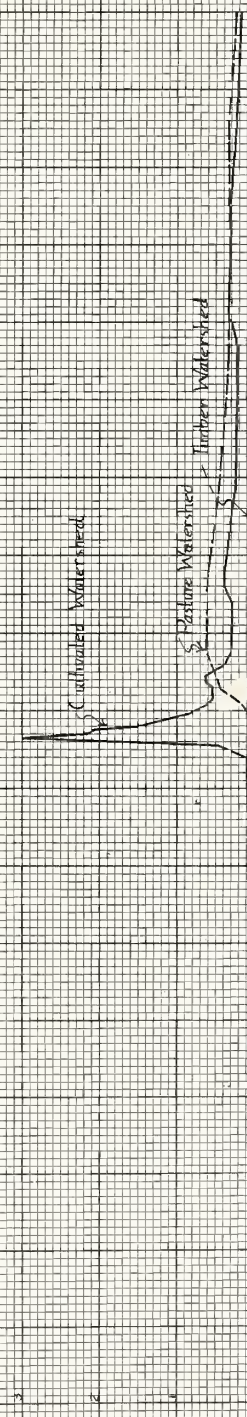
12 JAN 20 JANUARY 20, 1937

Rate of rainfall (inches per hr)  
 2 Runoff and 2 Runoff in inches

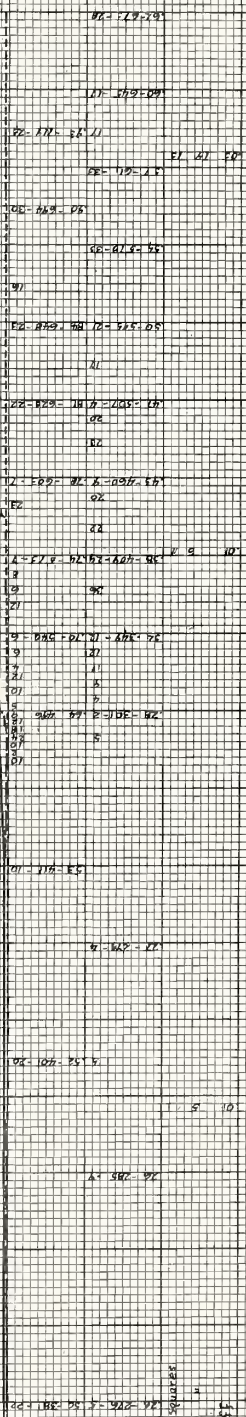
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6 5 4 3 2 1 0



6 5 4 3 2 1 0



6 5 4 3 2 1 0











[illegible][illegible]



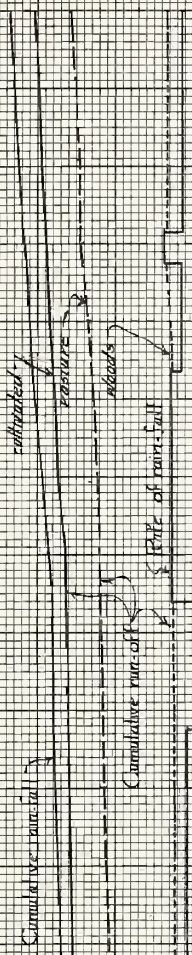


12 in  
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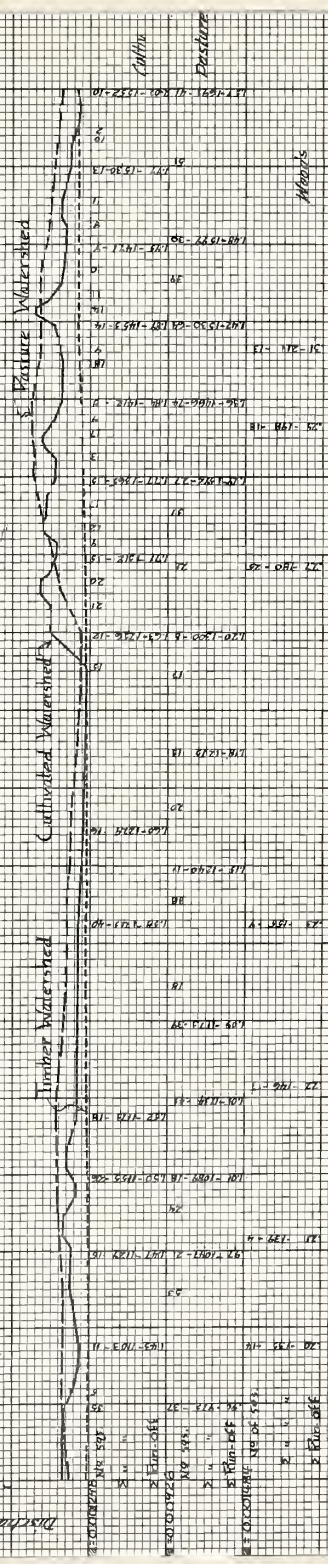
10  
JANUARY 8, 1937

7 am

2 Run-off and 2 in off. in inches  
Rate of rain-fall, inches per hr.



Discharge in second-feet













12 m

11

10

9

8

7 1/2 m

JANUARY 28, 1937

Rate of rain-fall, inches per hr.  
Rate of rain-fall and 2 run-off in inches

Cumulative rain-fall

Cumulative run-off

Rate of rain-fall

Discharge in second-feet

Pasture Watershed Cultivated Watershed

Run-off

Run-off

Run-off

Run-off

Run-off

Run-off

Run-off

Run-off

67-45-10

702-2178-15 740-1848-10

68-46-0-R 704-2301-9 741-1856-R

67-46-0

702-2178-15

702-2178-15

71-48-16

706-2225-R 742-1861-5

72-48-71

707-2231-6 742-1870-5

72-48-71

73-49-51





Sheet 10 of 11 Sheets



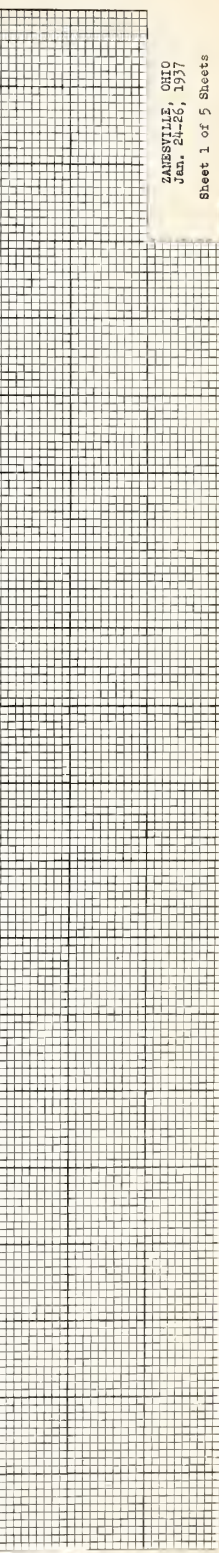
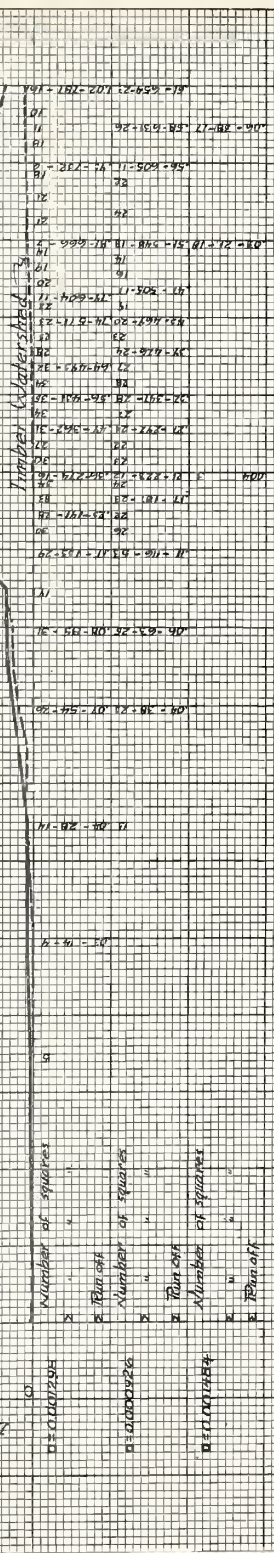
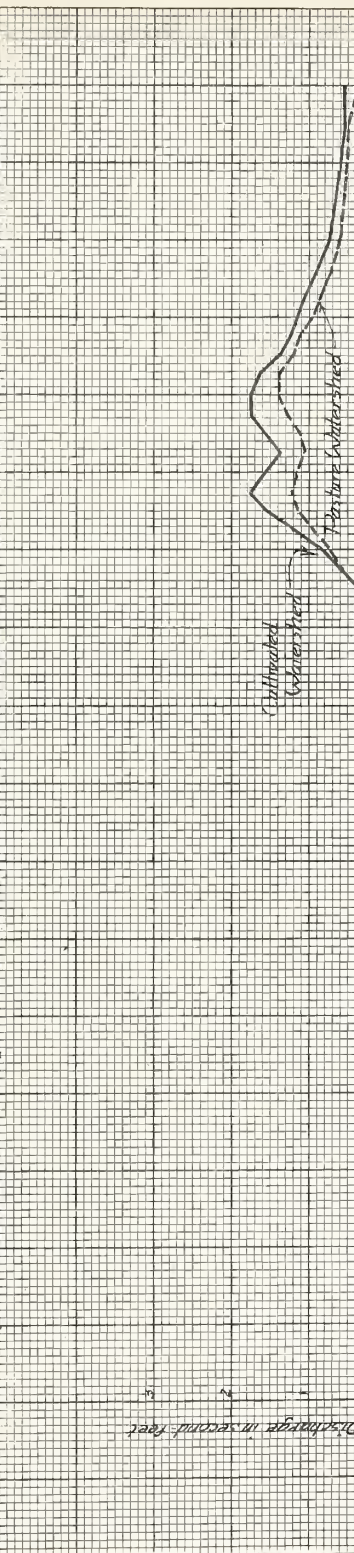
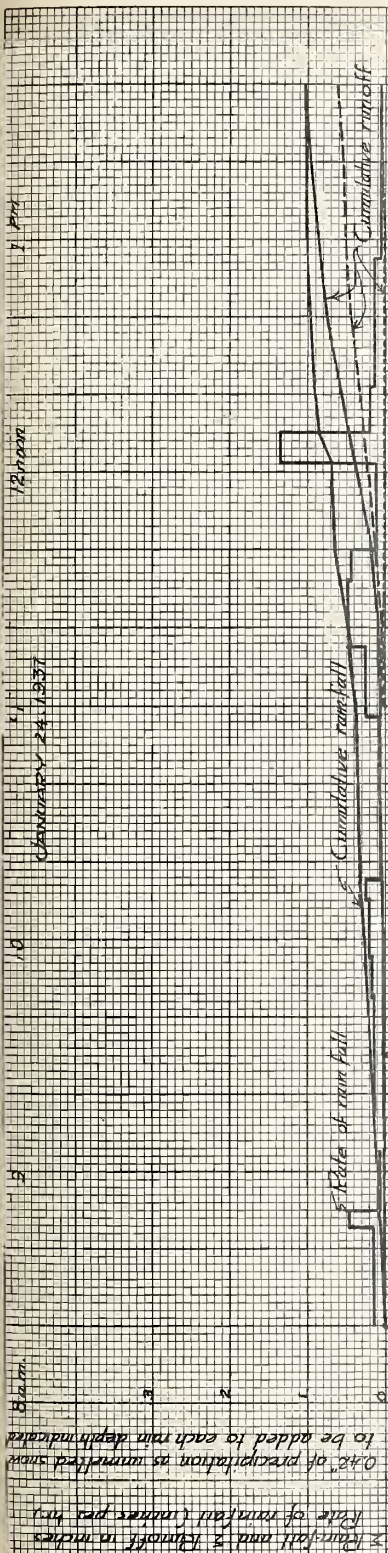








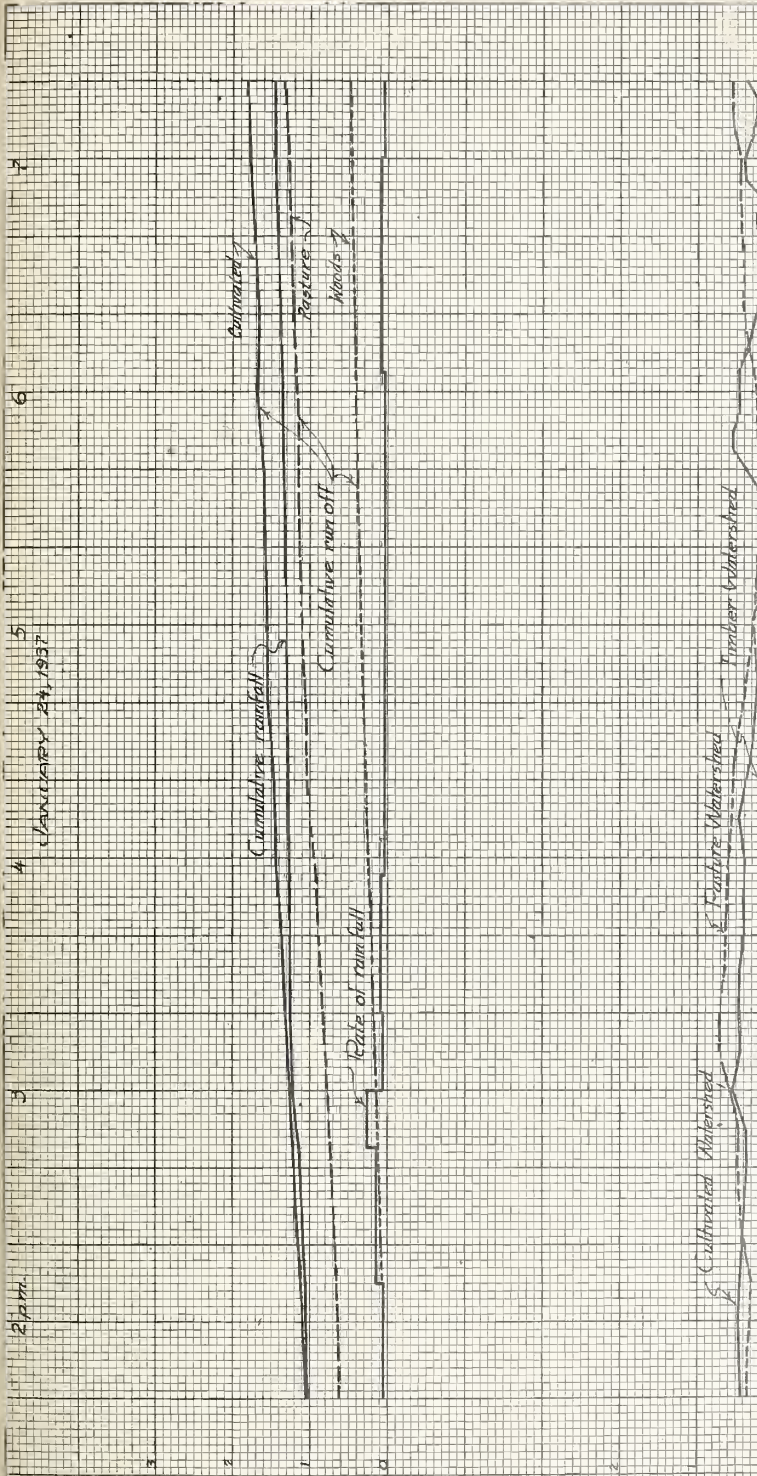




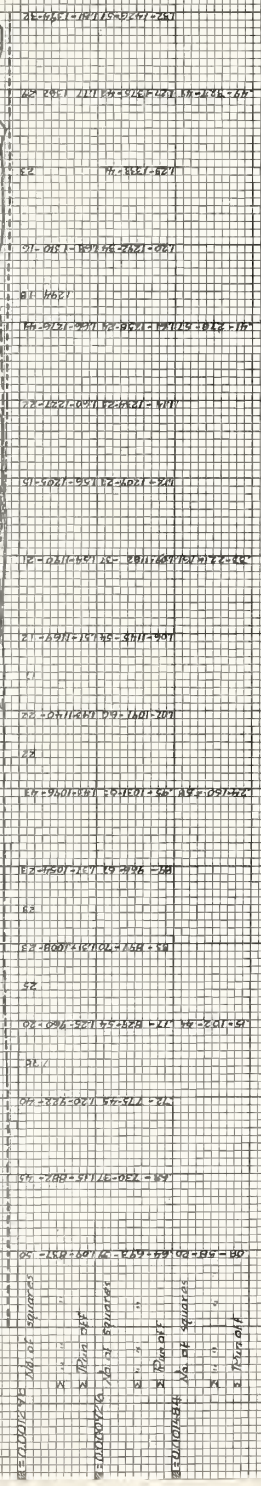




2 Rainfall and 2 run off in inches  
 (Scale of rainfall inches per hr)



Discharge in second feet













2 12.7%  
 4 JANUARY 25, 1957  
 5

2 Run off, in inches

Discharge in second-feet

Cumulative rain

Cumulative runoff

Timber Watershed Pasture Watershed

Cultivated Watershed

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 5-23-70  
 6-24-70  
 7-25-70











**Debra**

May 26, 1937

2 Roundoff and 2 Run-off matches per  
Role of round-off matches per

Page of content

Cumulative  
rainfall

Cumulative runoff

Cultivated Watershed

Area (acres) 2.546  
 Preceding Rain (in.) 0.85  
 date begun May 22  
 duration (hours) 2  
 Temperature (max. & min.) 81-5  
 Soil (major type) knuckinum  
 percent of area all  
 slope, average (percent) 14  
 maximum 18  
 Cover, type Wheat  
 height (ft.) 20 in.  
 date last cultivated 0  
 Soil loss (tons per acre) 0.2  
 Remarks

## Remarks

Cultivated Wallerstedt

| Number of squares |
|-------------------|
| 20                |
| 10                |
| 5                 |
| 2                 |
| 1                 |
| 0                 |

2. Beweis

2: Distance in second

|      |         | FIRST ROUND |      |      |      |  |  |
|------|---------|-------------|------|------|------|--|--|
|      |         | 2           | 3    | 4    | 5    |  |  |
|      |         | ΔT          | ΔD   | ΔD   | ΔD   |  |  |
| TIME | 9:10 AM | 5           | 2.00 | 0.04 | 0.48 |  |  |
|      | 9:15    | 17          | 0.04 | 0.06 | 0.21 |  |  |
|      | 9:30    | 7           | 0.10 | 0.04 | 0.24 |  |  |
|      | 9:45    | 20          | 0.15 | 0.03 | 0.06 |  |  |
|      | 10:00   | 5           | 0.28 | 0.04 | 0.06 |  |  |
|      | 10:15   | 49          | 0.34 | 0.00 | 0.00 |  |  |
|      | 10:30   | 5           | 0.34 | 0.10 | 1.20 |  |  |
|      | 11:00   | 2           | 0.50 | 0.06 | 4.80 |  |  |
|      | 11:15   | 2           | 0.58 | 0.06 | 1.50 |  |  |

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ZANESVILLE, OHIO  
Sheet 1 of 1 Sheet

STORM NO. 5 May 26, 1937

Plot by F. K. date 4/10/39 checked by C. K. date 4/10/39  
Computations by F. K. date 4/10 checked by W. date 4/30/39





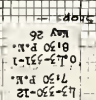
MAY 26, 1957



SECOND RAIN  
MAY 28, 1937

| 1       | 2    | 3    | 4    | 5    |
|---------|------|------|------|------|
| Time    | At   | Pr   | Ad   | PM   |
| x       | TIME | PL   | TR   | PM   |
| 2:20 PM | 5    | 0:10 | 0:15 | 1:32 |
| 2:25    | 4    | 0:15 | 0:15 | 0:52 |
| 2:32    | 4    | 0:24 | 0:15 | 1:37 |
| 2:35    | 10   | 0:34 | 0:15 | 0:56 |
| 2:37    | 18   | 0:36 | 0:15 | 0:57 |
| 2:40    | 32   | 0:38 | 0:15 | 0:58 |
| 2:55    | 4    | 0:35 | 0:15 | 0:52 |
| 2:58    | 11   | 0:44 | 0:15 | 0:52 |
| 2:59    | 12   | 0:40 | 0:15 | 0:50 |
| 3:05    | 2    | 0:50 | 0:15 | 1:34 |
| 3:11    | 2    | 0:50 | 0:15 | 0:56 |
| 3:25    | 71   | 1:02 | 0:12 | 1:30 |
| 3:42    | 71   | 1:02 | 0:10 | 0:50 |
| 3:42    | 71   | 1:02 | 0:10 | 0:50 |
| 6:22    | 72   | 1:02 | 0:10 | 0:50 |

Above analysis used for both Watersheds



Number of squares

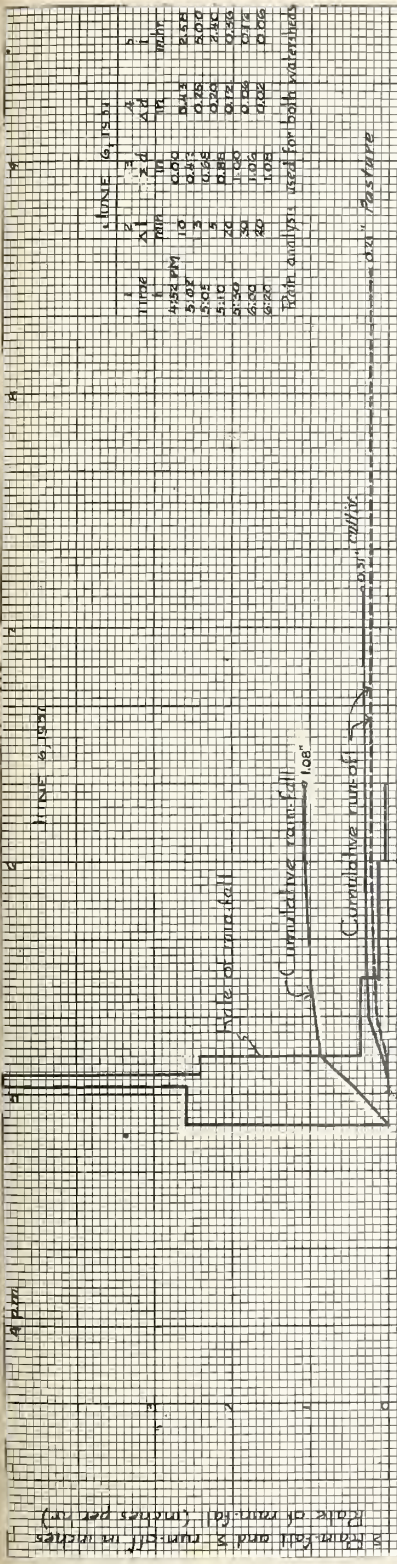
Woods run-off as Box Volume

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ZANESVILLE, OHIO  
Sheet 1 of 1 Sheet  
FORM NO. 6 May 26-27, 1937

Plot by F.K. date 4/10/39 checked by C.K. date 7/10/39  
Computations by F.K. date 4/10/39 checked by C.K. date 4/10/39





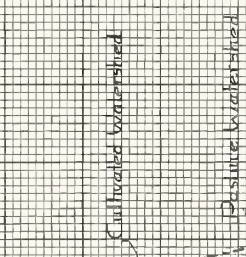


**Cultivated Watershed**

Area (acres) 2.546  
 Preceding Rain (in.) 0.54  
 date began June 5  
 duration (hours) 1 hr. 20 min.  
 Temperature (max. & min.) 87-63  
 Soil (major type) Muskogean silt  
 percent of area all  
 Slope, average (percent) 14  
 maximum 18  
 Cover, type Wheat  
 height (ft.) 30 in.  
 date last cultivated -  
 Soil loss (tons per acre) 0.096  
 Remarks Wheat was seeded on contour Oct. 1936

**Pasture watershed**

Area (acres) 3.568  
 Preceding Rain (in.) 0.54  
 date began June 5  
 duration (hours) same  
 Temperature (max. & min.) 87-63  
 Soil (major type) same  
 percent of area all  
 Slope, average (percent) 14  
 maximum 18  
 Cover, type Mixed grass  
 height (ft.) 10 in.  
 date last cultivated -  
 Soil loss (tons per acre) 0.001  
 Remarks Good mixed grass cover



Discharge in second feet

| Time in hours | Number of squares | Run off | Number of squares | Run off |
|---------------|-------------------|---------|-------------------|---------|
| 0.25          | 1                 | 0.03    | 1                 | 0.03    |
| 0.50          | 2                 | 0.06    | 2                 | 0.06    |
| 0.75          | 3                 | 0.09    | 3                 | 0.09    |
| 1.00          | 4                 | 0.12    | 4                 | 0.12    |
| 1.25          | 5                 | 0.15    | 5                 | 0.15    |
| 1.50          | 6                 | 0.18    | 6                 | 0.18    |
| 1.75          | 7                 | 0.21    | 7                 | 0.21    |
| 2.00          | 8                 | 0.24    | 8                 | 0.24    |
| 2.25          | 9                 | 0.27    | 9                 | 0.27    |
| 2.50          | 10                | 0.30    | 10                | 0.30    |
| 2.75          | 11                | 0.33    | 11                | 0.33    |
| 3.00          | 12                | 0.36    | 12                | 0.36    |
| 3.25          | 13                | 0.39    | 13                | 0.39    |
| 3.50          | 14                | 0.42    | 14                | 0.42    |
| 3.75          | 15                | 0.45    | 15                | 0.45    |
| 4.00          | 16                | 0.48    | 16                | 0.48    |
| 4.25          | 17                | 0.51    | 17                | 0.51    |
| 4.50          | 18                | 0.54    | 18                | 0.54    |
| 4.75          | 19                | 0.57    | 19                | 0.57    |
| 5.00          | 20                | 0.60    | 20                | 0.60    |

No run off on Woods watershed

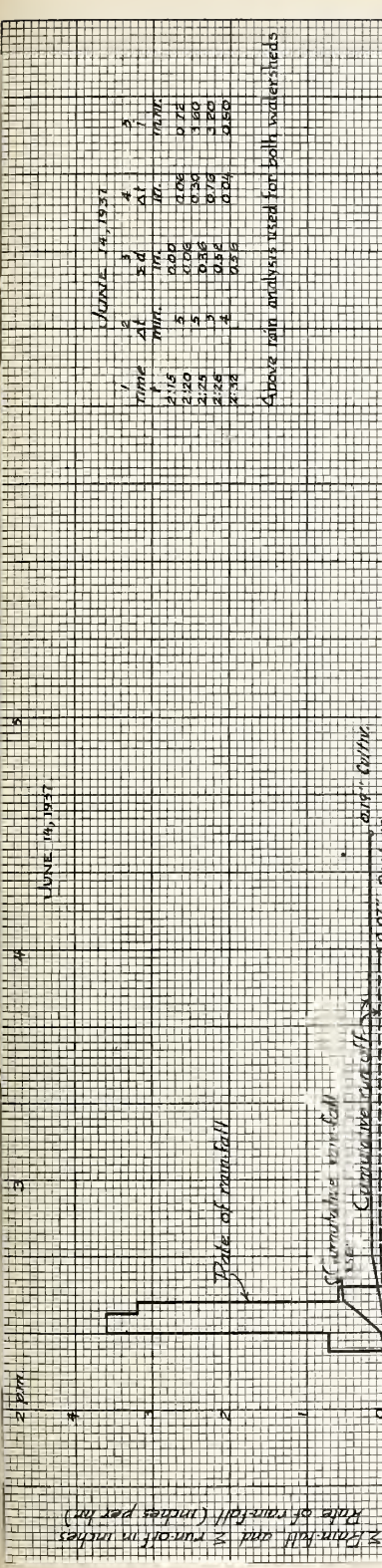
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 N. W. APPALACHIAN EXPERIMENT STATION  
 ZANESVILLE, OHIO

SHEET NO. 7 June 6, 1937

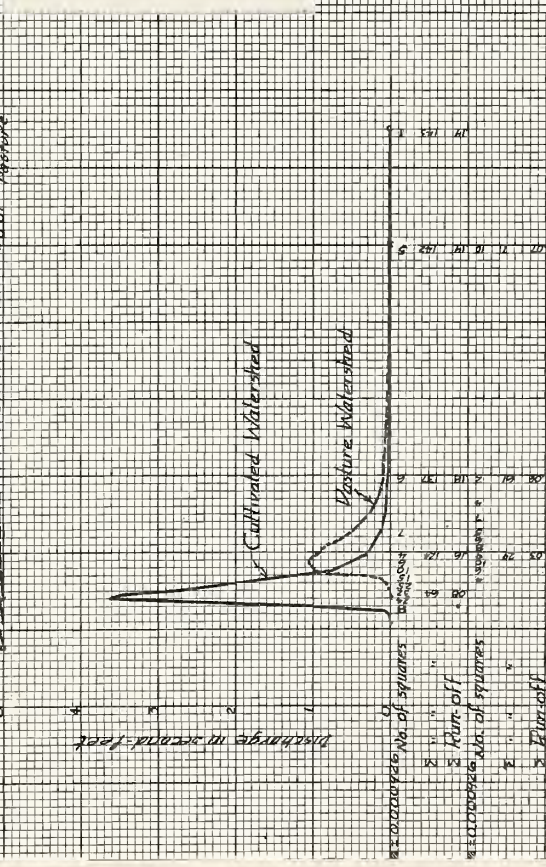
Plot by E.K. date 4/12/37 checked by G.K. 4/12/38  
 Computations by G.K. date 4/12/38 checked by G.K. 4/12/38



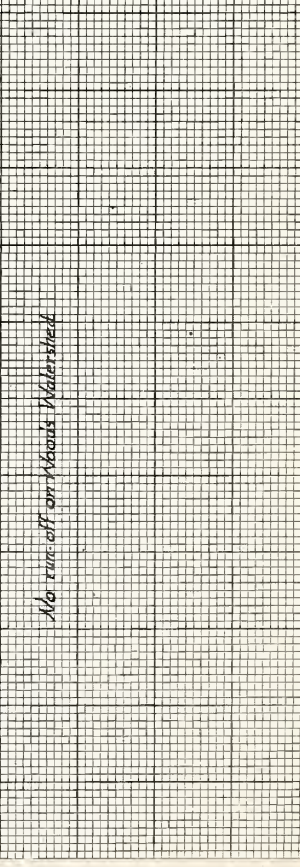




| Cultivated Watershed      |   | Pasture Watershed |  |
|---------------------------|---|-------------------|--|
| Area (acres)              | 2.546   | 3.568             |  |
| Preceding Rain (in.)      | 0.21  | 0.21              |  |
| Date before June 14       |   | June 14           |  |
| Duration (hours)          | 4   | 4                 |  |
| Temperature (max. & min.) | 79-67   | 79-67             |  |
| Soil (type)               | Waukegan silt   | Waukegan silt     |  |
| Percent of area all       | 14  | 14                |  |
| Slope, average (percent)  | 14  | 14                |  |
| Cover, type               | Wheat   | Mixed grass       |  |
| Height (ft.)              | 3   | 8-10 in.          |  |
| Soil loss (tons per acre) | 0.042   | 0.006             |  |
| Remarks                   | Went approx. 3 ft. high, was planted on contour Oct. 1936 | Good grass cover  |  |



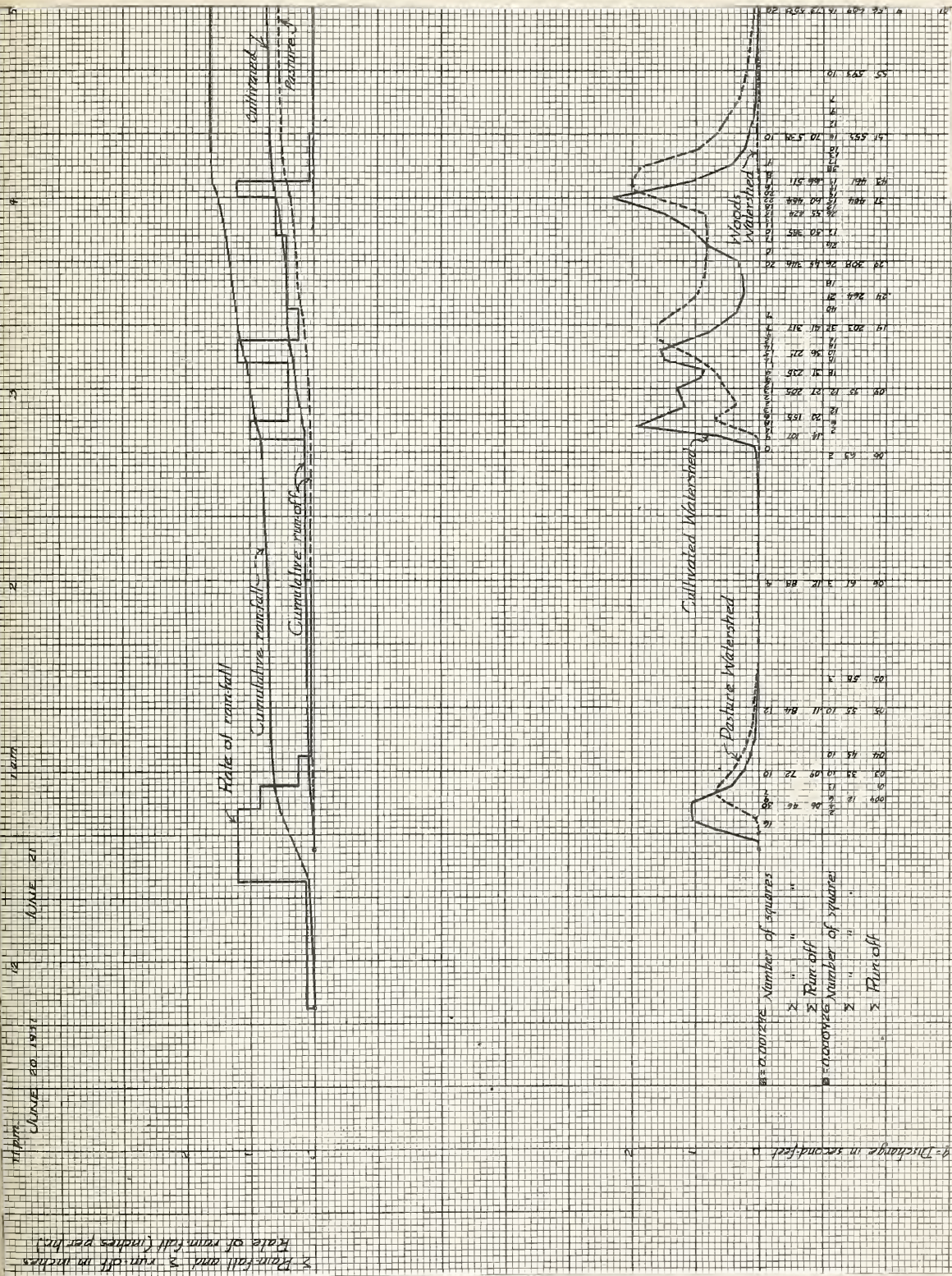
| Cultivated Watershed      |   | Pasture Watershed |  |
|---------------------------|---|-------------------|--|
| Area (acres)              | 2.546   | 3.568             |  |
| Preceding Rain (in.)      | 0.21  | 0.21              |  |
| Date before June 14       |   | June 14           |  |
| Duration (hours)          | 4   | 4                 |  |
| Temperature (max. & min.) | 79-67   | 79-67             |  |
| Soil (type)               | Waukegan silt   | Waukegan silt     |  |
| Percent of area all       | 14  | 14                |  |
| Slope, average (percent)  | 14  | 14                |  |
| Cover, type               | Wheat   | Mixed grass       |  |
| Height (ft.)              | 3   | 8-10 in.          |  |
| Soil loss (tons per acre) | 0.042   | 0.006             |  |
| Remarks                   | Went approx. 3 ft. high, was planted on contour Oct. 1936 | Good grass cover  |  |



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 ZANESVILLE, OHIO  
 Sheet 1 of 1 Sheet  
 Station No. 6 June 14, 1937  
 Plot by F. K. date 4/13/38 checked by K. K. 4/13/38 date  
 Compiled by F. K. date 4/13/38 checked by K. K. 4/13/38 date







ZANESVILLE, OHIO  
June 20-21, 1937  
Sheet 1 of 3 Sheets

$\Sigma$  Runoff  
Number of squares

$\Sigma$  Runoff  
Number of squares

$\Sigma$  Runoff  
Number of squares





Rate of rain fall (inches per hour)

June 21, 1937

Rate of rain fall

Cumulative run-off

Rate of rain fall

Cumulative run-off

| Cultivated Watershed      |                | Pasture Watershed       |                         | Timber Watershed              |  |
|---------------------------|----------------|-------------------------|-------------------------|-------------------------------|--|
| Area (acres)              | 2.546          | 3.569                   | 2.227                   | 2.227                         |  |
| Preceding Rain (in.)      | 0.09           | 0.09                    | 0.09                    | 0.09                          |  |
| Date began                | June 16        | June 16                 | June 16                 | June 16                       |  |
| Duration (hours)          | 1.5            | 1.5                     | 1.5                     | 1.5                           |  |
| Temperature (max. & min.) | 84-60          | 84-60                   | 84-60                   | 84-60                         |  |
| Soil (major type)         | Maestegum oilt | same                    | same                    | same                          |  |
| Percent of area           | all            | all                     | all                     | all                           |  |
| Slope, average (percent)  | 14             | 14                      | 14                      | 14                            |  |
| Cover, type               | Wheat          | Mixed grass             | Mixed grass             | Mixed hardwoods               |  |
| Ac-ft (1 in.)             | 18             | 8-10 in.                | 8-10 in.                | 18                            |  |
| Date last cultivated      | -              | -                       | -                       | -                             |  |
| Soil loss (tons per acre) | 0.423          | 0.024                   | 0.017                   | 0.017                         |  |
| Runoff (ft. on contour)   | 3 ft.          | Good mixed grass cover. | Good mixed grass cover. | Second growth mixed hardwoods |  |
| Oct. 1936                 |                |                         |                         |                               |  |

Discharge in second-feet

Cultivated Watershed Pasture Watershed Wooded Watershed

Number of squares

Run-off

Number of squares

Run-off

















下

$$\geq \text{Rain-fall and } \geq \text{Run-off in inches}$$


Cumulative cut-off:

81300518  
4750 0074  
Aug 10  
Aug 10

Cultivated Watershed

area (acres) 2,546

fencing (date) (in.) 0.57

date begun Aug. 9

duration (hours) 30 min.

temperature (max. & min.) 85-67

soil (major type) limestone silt

percent of area all

slope, average (percent) 14

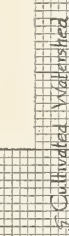
maxima 18

river, type new meadow without

height (ft.) 8-10 in.

date last cultivated —

total loss (tons per acre) 1.019 (run of 9th p.m. and 9th -10th)



No run off on Pasture and Timber Watersheds

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ZANESVILLE, OHIO  
Sheet 1 of 1 Sheet

STORM NO. 11-- August 10, 1937

Plot by E. K., date 4/17, checked by G. K., date 4/27/39  
Computations by E. K., date 4/17, clocked by A. H., date 4/17/39





7

1938



\* Storms for which rainfall and runoff were completely analyzed and plotted.

MONTH \_\_\_\_\_, 1938  
SHEET 1 OF 7 SHEETS

# RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

PROJECT ZANESVILLE, OHIO 8-12369

| DATE       | WATERSHED         |                 | RAINFALL   |                  |                       |                    |                                |                                 | TEMPERATURE<br>(degrees F)      |                    | RUN-OFF |  |                                 |                    |                     | RAINFALL MINUS<br>Losses (inches) | Soil Loss<br>(tons per acre) | COMMENTS ON WATERSHED  |      |
|------------|-------------------|-----------------|------------|------------------|-----------------------|--------------------|--------------------------------|---------------------------------|---------------------------------|--------------------|---------|--|---------------------------------|--------------------|---------------------|-----------------------------------|------------------------------|--|------|
|            | Number            | Area<br>(acres) | Gage No.   | Begin<br>(hour)  | Duration<br>(minutes) | Amount<br>(inches) | MAXIMUM INTENSITY              |                                 |                                 | Maximum            | Minimum | Began<br>(hour)                        | Ended<br>(hour)                 | Amount<br>(inches) | MAXIMUM RATE        |                                   |                              |  |      |
|            |                   |                 |            |                  |                       |                    | 5 minutes<br>(inches per hour) | 15 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) |                    |         |  |                                 |                    | Cu ft. sec.         |                                   |                              |  | Time |
|            |                   |                 |            |                  |                       |                    |                                |                                 |                                 |                    |         |  |                                 |                    |                     |                                   |                              |  |      |
| (1)        | (2)               | (3)             | (4)        | (5)              | (6)                   | (7)                | (8)                            | (9)                             | (10)                            | (11)               | (12)    | (13)                                   | (14)                            | (15)               | (16)                | (17)                              | (18)                         | (19)   |      |
| Jan. 10-11 | Snow              |                 | Cult. Std. | -                | -                     | 0.12               | -                              | -                               | -                               | 32                 | 15      |  | No Runoff                       |                    |                     |                                   |                              | Cult. W. S. in a mixed meadow of clover, alfalfa and timothy seeded with wheat fall of 1936 and in spring of 1937. |      |
| Jan. 12    | -                 | -               | " "        | -                | -                     | 0.04               | -                              | -                               | -                               | 37                 | 30      |  | No Runoff                       |                    |                     |                                   |                              | Past. W. S. in a mixed blue grass cover (good)   |      |
| Jan. 21    |                   |                 | " "        | 8 A.M.           | 11 hr.                | 0.22               | 0.06                           | 0.06                            | 0.06                            | 42                 | 22      |  | No Runoff                       |                    |                     |                                   |                              | Woods W. S. Second growth mixed hardwood, good ground litter.  |      |
| Jan. 24    |                   |                 | " "        | 3:15 P.          | 45                    | 0.05               | 0.60                           | 0.28                            | 0.15                            | 50                 | 32      |  | No Runoff                       |                    |                     |                                   |                              |  |      |
| Jan. 25    | Cult. Past. Woods |                 | " "        | 6:30 P.          | 10 hr.                | 0.25               | 0.48                           | 0.32                            | 0.16                            | 64                 | 30      |  | 0.03                            |                    |                     | 0.22                              | 0.000                        |  |      |
| Jan. 30    | Cult. Past. Woods |                 | " "        | 12:30 P.         | 12 hr.                | 0.84               | 0.14                           | 0.14                            | 0.14                            | 47                 | 17      | 12:45 P. 9:00 A.<br>1:50 P. 6:00 A.    | 0.34<br>0.29 T <sub>e</sub>     | 0.15<br>0.18       | 6:00 P.<br>9:00 P.  | 0.42<br>0.47 -                    | 0.017<br>0.000               |  |      |
| Feb. 3     | Cult. Past. Woods |                 | Cult. Std. | 5:30 A.          | 90                    | 0.09               | 0.06                           | 0.06                            | 0.06                            | 47                 | 22      |  | 0.01 T <sub>e</sub>             | No Runoff          |                     | 0.08                              | 0.000                        |  |      |
| Feb. 6     | Cult. Past. Woods |                 | Cult. Std. | Noon             | 370                   | 0.68               | 2.40                           | 1.08                            | 0.68                            | 63                 | 33      | 1:40 P. 7:45 A.<br>2:00 P. 1 A.M.      | (0.34)<br>(0.35) T <sub>e</sub> | 1.05<br>1.82       | 4:35 P.<br>4:35 P.  | 0.34<br>0.33                      | 0.289<br>0.006               | Cult. W. S. Meadow-2" high<br>Past. W. S. Grass 2" high  |      |
| Feb. 9     |                   |                 | " "        | -                | -                     | 0.05               | -                              | -                               | -                               | 59                 | 24      |  | No Runoff                       |                    |                     |                                   |                              |  |      |
| Feb. 12    | Cult. Past. Woods |                 | Cult. Std. | 11:20 A.         | 120                   | 0.46               | 0.36                           | 0.24                            | 0.24                            | 37                 | 20      | Noon-12 Noon-1:30 P.<br>12:30 P. Midn. | 0.25<br>0.06 T <sub>e</sub>     | 0.21<br>0.16       | 12:30 P.<br>1:00 P. | 0.21<br>0.40                      | 0.044<br>0.001               |  |      |
| Feb. 13    |                   |                 | " "        | P.M.             | -                     | 0.04               | -                              | -                               | -                               | 56                 | 30      |  | No Runoff                       |                    |                     |                                   |                              |  |      |
| Feb. 17-18 | -                 |                 | " "        | 2 P.M.-17-13 hr. | 0.11                  | -                  | -                              | -                               | -                               | 61                 | 17      |  | No Runoff                       |                    |                     |                                   |                              |  |      |
| Feb. 18-19 | Cult. Past. Woods |                 | " "        | 1 P.M.-2-18      | 38 hr.                | 0.86               | 0.84                           | 0.40                            | 0.26                            | 61                 | 29      | 3:00 P. 8:00 A.<br>2-20                | 0.45<br>0.21                    | 0.26               | 7:20 P.<br>2-19     | 0.41                              | 0.011                        |  |      |
| "          | Past. Woods       |                 | " "        | " "              | " "                   | " "                | " "                            | " "                             | " "                             |                    |         | 4:00 P. 10:00 A.                       | 0.21<br>0.01                    | 0.22               | 7:20 P.             | 0.65                              | 0.003                        |  |      |
| "          | "                 |                 | " "        | " "              | " "                   | " "                | " "                            | " "                             | " "                             | Included some snow |         | 0.10"                                  | of which                        |                    |                     |                                   | 0.000                        | This precipitation was 0.96" but did not melt for above runoff   |      |





UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH 1938  
 SHEET 2 OF 7 SHEETS

 PROJECT Zanesville, Ohio  
 RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

| Date       | Watershed            |              | Rainfall         |              |                    |                 |                             |                              | Temperature (degrees F.)     |         | Run-off |  |              |                 | Rainfall Mins (inches) | Size Loss (tons per acre) | Condition of Watershed |              |      |
|------------|----------------------|--------------|------------------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|---------|---------|--|--------------|-----------------|------------------------|---------------------------|------------------------|--------------|------|
|            | Number               | Area (acres) | Gage No.         | Begin (hour) | Duration (minutes) | Amount (inches) | Maximum Intensity           |                              |                              | Maximum | Minimum | Began (hour)                           | Ended (hour) | Amount (inches) |                        |                           |                        | Maximum Rate |      |
|            |                      |              |                  |              |                    |                 | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |         |         |  |              |                 |                        |                           |                        | Cu. ft. sec. | Time |
| (1)        | (2)                  | (3)          | (4)              | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)    | (12)    | (13)                                   | (14)         | (15)            | (16)                   | (17)                      | (18)                   |              |      |
| Feb. 22    | Snow carried forward |              |                  |              |                    | 0.10            |                             |                              |                              |         |         |  |              |                 |                        |                           |                        |              |      |
| "          | Cult.                |              | Cult. Sta 47:30A | 180          |                    | 0.22            | 0.32                        | 0.04                         | 0.04                         | 35      | 24      | AM-22-8AM-23                           | 0.20         | 0.04            | 5:00P                  | 22-0.12                   | 0.003                  |              |      |
| "          | Paste                |              | "                | "            | "                  | 0.32            | "                           | "                            | "                            |         |         | 8:00A 2 A.M.                           | 0.06         | 0.03            | 2:00P                  | 0.26                      | 0.003                  |              |      |
| "          | Woods                |              | "                | "            | "                  | 0.32            | "                           | "                            | "                            |         |         |  | No Runoff    |                 |                        |                           | 0.003                  |              |      |
| Feb. 26    | Snow                 |              | "                | "            | "                  | 0.06            | "                           | "                            | "                            | 30      | 21      |  | No Runoff    |                 |                        |                           |                        |              |      |
|            |                      |              |                  |              |                    |                 |                             |                              |                              |         |         |  |              |                 |                        |                           |                        |              |      |
| Mar. 2-3   |                      |              | "                | "            | "                  | 0.07            | "                           | "                            | MARCH                        | 47      | 22      |  | No Runoff    |                 |                        |                           |                        |              |      |
| Mar. 5     | Cult.                |              | Cult. Sta 49:45A | 12hr.        |                    | 0.21            | 0.84                        | 0.32                         | 0.20                         | 52      | 14      |  | 0.02         |                 |                        | 0.19                      | 0.001                  |              |      |
| "          | Paste                |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         |  | No Runoff    |                 |                        | "                         | "                      |              |      |
| "          | Woods                |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         |  | No Runoff    |                 |                        | "                         | "                      |              |      |
| Mar. 9-10  | Cult.                |              | "                | 3-9          | 15 hr.             | 0.33            | 0.10                        | 0.10                         | 0.10                         | 48      | 23      |  | 0.02         |                 |                        | 0.31                      | 0.001                  |              |      |
| "          | Paste                |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         |  | No Runoff    |                 |                        |                           |                        |              |      |
| "          | Woods                |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         |  | No Runoff    |                 |                        |                           |                        |              |      |
| Mar. 13-14 | Cult.                |              | "                | 11:42A       | 26 hr.             | 1.58            | 0.48                        | 0.28                         | 0.20                         | 57      | 33      | 2:45P                                  | 8:00A        | (0.79)          | 0.25                   | 11:30A                    | 0.050                  |              |      |
| "          | "                    |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         | 3-13                                   | 3-15         |                 |                        | 3-14                      |                        |              |      |
| "          | Paste                |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         | 3:10P                                  | 4:00A        | (0.84)          | 0.29                   | 7:00A                     | 0.006                  |              |      |
| "          | "                    |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         | 3-15                                   | 3-15         |                 |                        | 3-14                      |                        |              |      |
| "          | Woods                |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         | 8:00P                                  | 10:00A       | (0.21)          | 0.04                   | 11:00A                    | 0.001                  |              |      |
|            |                      |              |                  |              |                    |                 |                             |                              |                              |         |         |  |              |                 | 3-14                   |                           |                        |              |      |
| Mar. 15-16 | Cult.                |              | "                | 7:00P        | 13 hr.             | 0.68            | 1.32                        | 0.44                         | 0.22                         | 56      | 33      | 7:00P                                  | 1:00P        | 0.37            | 0.23                   | 5:30A                     | 0.019                  |              |      |
| "          | "                    |              | "                | 3-15         | "                  | "               | "                           | "                            | "                            |         |         | 3-15                                   | 3-16         |                 |                        | 3-16                      |                        |              |      |
| "          | Paste                |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         | Runoff for this and next rain combined |              |                 |                        |                           |                        |              |      |
| "          | Woods                |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         |  |              |                 |                        |                           |                        |              |      |
| Mar. 16    | Cult.                |              | "                | 6:33P        | 30                 | 0.15            | 1.20                        | 0.40                         | 0.28                         | 56      | 33      | 7:15                                   | 7:17         | 0.09            |                        | 7-17                      | 0.004                  |              |      |
| "          | "                    |              | "                | "            | "                  | 0.68 plus 0.15" | "                           | "                            | "                            |         |         | 7:25A                                  | 10:00A       | 0.37            | 0.37                   | 5:30A                     | 0.004                  |              |      |
| "          | Paste                |              | "                | "            | "                  | 0.68 plus 0.15" | "                           | "                            | "                            |         |         | P.M.                                   | 11:59P       | 0.11            | 0.02                   | 9:00A                     | 0.001                  |              |      |
| "          | Woods                |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         | 3-15                                   | 3-16         |                 |                        | 3-16                      |                        |              |      |
| Mar. 17-18 | -                    |              | "                | "            | "                  | 0.04            | "                           | "                            | "                            | 73      | 37      |  | No Runoff    |                 |                        |                           |                        |              |      |
| Mar. 22-23 | Cult.                |              | "                | 5:35P        | 14 hr.             | 0.52            | 0.96                        | 0.40                         | 0.20                         | 82      | 45      |  | 0.05         |                 |                        | 0.17                      | 0.003                  |              |      |
| "          | "                    |              | "                | "            | "                  | 0.52            | "                           | "                            | "                            |         |         |  | 0.01         |                 |                        | 0.51                      | 0.000                  |              |      |
| "          | Paste                |              | "                | "            | "                  | 0.52            | "                           | "                            | "                            |         |         |  | No Runoff    |                 |                        |                           |                        |              |      |
| "          | Woods                |              | "                | "            | "                  | "               | "                           | "                            | "                            |         |         |  |              |                 |                        |                           |                        |              |      |





UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH
MONTH 1938SHEET 3 OF 7 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

Project Zanesville, Ohio

| Date       | Watershed |              | Rainfall |              |                    |                 |                             | Temperature (degrees F.)     |                              | Run-off |         |              |              |                 | Rainfall minus Run-off (inches) | Silt Loss (tons per acre) | Condition of Watershed |                                |                           |
|------------|-----------|--------------|----------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|---------|---------|--------------|--------------|-----------------|---------------------------------|---------------------------|------------------------|--------------------------------|---------------------------|
|            | Number    | Area (acres) | Gage No. | Began (hour) | Duration (minutes) | Amount (inches) | Maximum Intensity           |                              |                              | Maximum | Minimum | Began (hour) | Ended (hour) | Amount (inches) |                                 |                           |                        | Maximum Rate                   |                           |
|            |           |              |          |              |                    |                 | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |         |         |              |              |                 | Cu. ft. sec.                    | Time                      |                        |                                |                           |
| (1)        | (2)       | (3)          | (4)      | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)    | (12)    | (13)         | (14)         | (15)            | (16)                            | (17)                      | (18)                   | (19)                           |                           |
| Mar. 23    | Cult.     |              | "        | 2:00P        | 7 hr.              | 0.35            | 0.96                        | 0.44                         | 0.28                         | 82      | 45      | 2:00P        | 3:24         | 0.16            | 0.21                            | 3:00P                     | 0.19                   | 0.008                          | Past. W. S. Grass 3" high |
| "          | "         |              | "        | "            | "                  | 0.35            |                             |                              |                              |         | 2:50P   | 2:00A        | 0.14         | 0.34            | 3:05P                           | 0.21                      | 0.002                  |                                |                           |
| "          | Woods     |              | "        | "            | "                  | 0.35            |                             |                              |                              |         |         |              | 0.01         |                 |                                 | 0.34                      | -                      |                                |                           |
| Mar. 26    |           |              | "        | 12:30A       | 300                | 0.12            | 0.08                        | 0.08                         | 0.08                         | 58      | 35      |              |              | No Runoff       |                                 |                           |                        |                                |                           |
| Mar. 29    |           |              | Cult.    | Std. 1AM.    | 480                | 0.22            | 0.16                        | 0.16                         | 0.14                         | 64      | 34      |              |              | No Runoff       |                                 |                           |                        |                                |                           |
| Mar. 30-31 | Cult.     |              | "        | 1:10P        | 24hr.              | 0.81            | 0.48                        | 0.40                         | 0.28                         | 73      | 44      | 3:50P        | P.M.         | 0.18            | 0.16                            | 9:50A                     | 0.63                   | 0.003                          |                           |
| "          | "         |              | "        | 3-30         | "                  | "               |                             |                              |                              |         |         | 3-30         | 3-31         | 0.12            | 0.12                            | 10:00A                    | 0.69                   | 0.001                          |                           |
| "          | Paste     |              | "        | "            | "                  | "               |                             |                              |                              |         |         | 4:00P        | 4 AM.        | 0.01            |                                 |                           | 0.80                   | -                              |                           |
| "          | Woods     |              | "        | "            | "                  | "               |                             |                              |                              |         |         |              |              |                 |                                 |                           |                        |                                |                           |
| Apr. 2     |           |              | "        | "            | "                  | "               | 0.06                        | -                            | -                            | 55      | 32      |              |              | No Runoff       |                                 |                           |                        |                                |                           |
| Apr. 3     |           |              | "        | Noon         | 12 hr.             | 0.12            | -                           | -                            | -                            | 36      | 25      |              |              | No Runoff       |                                 |                           |                        |                                |                           |
| Apr. 6-7   | Cult.     |              | Cult.    | Std. 8 AM    | 24 hr.             | 0.85            | 0.72                        | 0.44                         | 0.38                         | 52      | 30      | P. M.        | P. M.        | 0.16            | 0.09                            | 8:30P                     | 0.69                   | 0.002                          |                           |
| "          | "         |              | "        | 4-6          | "                  | "               | "                           | "                            | "                            |         |         | 4-6          | 4-7          | 0.13            | 0.12                            | 9:00P                     | 0.72                   | 0.001                          |                           |
| "          | Paste     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         | 1 PM.        | 10 AM.       | 0.01            |                                 |                           | -                      | -                              |                           |
| "          | Woods     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              |                 |                                 |                           |                        |                                |                           |
| Apr. 7-8   | Cult.     |              | "        | 8 P.M.       | 12 hr.             | 0.50            | 0.48                        | 0.28                         | 0.20                         | 38      | 30      | 2:30A        | 2 PM.        | 0.23            | 0.19                            | 3:30A                     | 0.27                   | 0.004                          |                           |
| "          | "         |              | "        | 4-7          | "                  | "               | "                           | "                            | "                            |         |         | 4-8          | 4-8          | 0.22            | 0.23                            | 4:00A                     | 0.28                   | -                              |                           |
| "          | Paste     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         | 3:00A        | 4 PM.        | 0.02            |                                 |                           | 0.48                   | -                              |                           |
| "          | Woods     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              |                 |                                 |                           |                        |                                |                           |
| Apr. 8-9   | Cult.     |              | "        | 7:40P        | 20 hr.             | 0.81            | 0.24                        | 0.16                         | 0.16                         | 60      | 32      | 8:00P        | 1 AM         | 0.50            | 0.21                            | 6:30A                     | 0.31                   | 0.008                          |                           |
| "          | "         |              | "        | 4-8          | "                  | "               | "                           | "                            | "                            |         |         | 4-9          | 4-9          | 0.42            | 0.33                            | 7:30A                     | 0.39                   | -                              |                           |
| "          | Paste     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         | 8:00P        | 11:59P       | 0.11            |                                 |                           | 0.70                   | -                              |                           |
| "          | Woods     |              | "        | "            | "                  | "               | "                           | "                            | "                            |         |         | 4-9          | 4-9          | 0.11            |                                 |                           |                        | -                              |                           |
| Apr. 17-18 | -         |              | "        | 4-17         | 20 hr.             | 0.35            | 0.72                        | 0.32                         | 0.16                         | 78      | 53      |              |              | No Runoff       |                                 |                           |                        | Past. W. S. Grass 4" high      |                           |
| "          | "         |              | "        | 1 AM.        | "                  | "               | "                           | "                            | "                            |         |         |              |              |                 |                                 |                           |                        |                                |                           |
| Apr. 18    | -         |              | "        | 3 P.M.       | 330                | 0.36            | 0.60                        | 0.32                         | 0.22                         | 77      | 58      |              |              | No Runoff       |                                 |                           |                        |                                |                           |
| Apr. 21    |           |              | "        | 7 P.M.       | 100                | 0.06            | -                           | -                            | -                            |         |         |              |              | No Runoff       |                                 |                           |                        | Cult. W. S. Meadow-3" high     |                           |
| Apr. 28    |           |              | "        | 5:20P        | 230                | 0.56            | 2.40                        | 1.32                         | 0.90                         | 84      | 58      |              |              | No Runoff       |                                 |                           |                        | Past. W. S. Grass -2 1/2" high |                           |



UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH 19 38  
 SHEET 4 OF 7 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

 PROJECT Zanesville, Ohio

| DATE      | WATERSHED         |              | RAINFALL |              |                    |                 | TEMPERATURE (degrees F.)    |                              |                              |         | RUN-OFF |  |              |                 | RAINFALL MINUS RUN-OFF (inches) | SURF LOSS (tons per acre) | CONDITION OF WATERSHED |   |      |
|-----------|-------------------|--------------|----------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|---------|---------|--|--------------|-----------------|---------------------------------|---------------------------|------------------------|---|------|
|           | Number            | Area (acres) | Oggs No. | Began (hour) | Duration (minutes) | Amount (inches) | MAXIMUM INTENSITY           |                              |                              | Maximum | Minimum | Began (hour)                                     | Ended (hour) | Amount (inches) |                                 |                           |                        | MAXIMUM RATE  |      |
|           |                   |              |          |              |                    |                 | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |         |         |  |              |                 |                                 |                           |                        | Per sec.  | Time |
| (1)       | (2)               | (3)          | (4)      | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)    | (12)    | (13)   | (14)         | (15)            | (16)                            | (17)                      | (18)                   | (19)  |      |
| May 8     | -                 |              | " "      | 6:53 P       | 37                 | 0.69            | 5.76                        | 2.64                         | 1.50                         | 77      | 54      | Trace on runoff on Cult. and past. none on woods |              |                 |                                 |                           |                        | May 3 horses turned on pasture W. S. Cult. W. S. meadow 1 1/2" high Cult. W. S. Meadow 15" high Past. W. S. Grass 7" high |      |
| May 11-15 | Cult. Past. Woods |              | " "      | 7:14 A       | 37 hr              | 1.35            | 1.20                        | 0.64                         | 0.46                         | 66      | 40      |  | 0.01         | No Runoff       |                                 | 1.34                      | 0.000                  |   |      |
| May 17-18 | Cult. Past. Woods |              | " "      | 11:30 P      | 165                | 1.12            | 0.40                        | 0.40                         | 0.32                         | 65      | 48      |  | 0.04         | 0.17            |                                 | 1.08                      | 0.000                  |   |      |
| May 19    | Cult. Past. Woods |              | " "      | 8:06 A       | 50                 | 0.31            | 2.04                        | 1.16                         | 0.68                         | 70      | 55      |  | 0.04         | 0.12            |                                 | 0.27                      | 0.002                  |   |      |
| May 19-20 | Cult. Past. Woods |              | " "      | 7:30 P       | 300                | 0.41            | 1.68                        | 0.68                         | 0.34                         | 83      | 55      |  | 0.07         | 0.01            |                                 | 0.37                      | 0.005                  |   |      |
| May 20    | Cult. Past. Woods |              | " "      | 8:30 P       | 25                 | 0.36            | 0.96                        | 0.52                         | 0.32                         | 83      | 63      |  | 0.08         | 0.01            |                                 | 0.28                      | 0.007                  |   |      |
| May 21    | Cult. Past. Woods |              | " "      | 11:40 P      | 130                | 0.74            | 1.92                        | 0.80                         | 0.54                         | 81      | 60      |  | 0.29         | 0.31            |                                 | 0.45                      | 0.020                  |   |      |
| May 23-24 | Cult. Past. Woods |              | " "      | 10:40 A      | 17 hr              | 0.88            | 0.84                        | 0.56                         | 0.32                         | 76      | 54      |  | 0.19         | 0.16            |                                 | 0.69                      | 0.008                  |   |      |
| May 29-30 | Cult. Past. Woods |              | " "      | 5:23 P       | "                  | 0.88            | "                           | "                            | "                            | "       | "       |  | 0.29         | 0.02            |                                 | 0.59                      | 0.000                  |   |      |
| June 1    | Cult. Past. Woods |              | " "      | 11:47 P      | 4                  | 0.10            | 1.20                        | 0.40                         | 0.20                         | 74      | 54      |  | No Runoff    |                 |                                 |                           |                        | Past. W. S. Grass 8" high   |      |
| June 2    | Cult. Past. Woods |              | " "      | 11:55 A      | 7                  | 0.18            | 1.68                        | 0.72                         | 0.36                         | 80      | 59      |  | No Runoff    |                 |                                 |                           |                        |   |      |
| June 4-5  | Cult. Past. Woods |              | " "      | Std.         | "                  | 0.06            | "                           | "                            | "                            | 79      | 56      |  | No Runoff    |                 |                                 |                           |                        |   |      |
| June 7    | Cult. Past. Woods |              | " "      | "            | "                  | 0.07            | "                           | "                            | "                            | 83      | 60      |  | No Runoff    |                 |                                 |                           |                        |   |      |





UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 DIVISION OF RESEARCH

 MONTH           , 19 38  
 SHEET 5 OF 7 SHEETS

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

 PROJECT Zanesville, Ohio

| Date       | WATERSHED |              |           | RAINFALL     |                    |                 |                             | TEMPERATURE (degrees F.)     |                              | RUN-OFF |         |              |              | RAINFALL MINES (inches) | SILT LOSS (tons per acre) | CONDITION OF WATERSHED |                 |              |      |
|------------|-----------|--------------|-----------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|---------|---------|--------------|--------------|-------------------------|---------------------------|------------------------|-----------------|--------------|------|
|            | Number    | Area (acres) | Gage No.  | Began (hour) | Duration (minutes) | Amount (inches) | MAXIMUM INTENSITY           |                              |                              | Maximum | Minimum | Began (hour) | Ended (hour) |                         |                           |                        | Amount (inches) | MAXIMUM RATE |      |
|            |           |              |           |              |                    |                 | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |         |         |              |              |                         |                           |                        |                 | Ch. ft. sec. | Time |
| (1)        | (2)       | (3)          | (4)       | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)    | (12)    | (13)         | (14)         | (15)                    | (16)                      | (17)                   | (18)            |              |      |
| June 10    |           |              | "         | 6:20A        | 60                 | 0.15            | 1.08                        | 0.14                         | 0.24                         | 80      | 58      |              |              | No Runoff               |                           |                        |                 |              |      |
| June 10    |           |              | "         | 6:15P        | 30                 | 0.05            | -                           | -                            | -                            |         |         |              |              | No Runoff               |                           |                        |                 |              |      |
| June 11    | Cult.     |              | "         | 3:33P        | 387                | 1.00            | 2.76                        | 2.28                         | 1.56                         | 80      | 64      | 8:27P        | 10:30P       | 0.06                    | 1.05                      | 8:30P                  | 0.94            |              |      |
|            | Past.     |              | "         | "            | "                  | "               | "                           | "                            | "                            |         |         | 8:25P        | 10:30P       | 0.18                    | 3.02                      | 8:35P                  | 0.82            |              |      |
|            | Woods     |              | "         | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              |                         |                           |                        |                 |              |      |
| June 16    |           |              | Cult.     | Std          | 12:19P             | 6               | 0.09                        | 0.84                         | 0.32                         | 85      | 63      |              |              | No Runoff               |                           |                        |                 |              |      |
| June 22    | Cult.     |              | "         | 8:50P        | 125                | 1.20            | 3.36                        | 2.18                         | 1.86                         | 86      | 62      | 9:10P        | 10:00P       | 0.11                    | 1.50                      | 9:20P                  | 1.09            |              |      |
|            | Past.     |              | "         | "            | "                  | 1.02            | "                           | "                            | "                            |         |         | 9:10P        | 10:05P       | 0.08                    | 1.19                      | 9:20P                  | 0.94            |              |      |
|            | Woods     |              | "         | "            | "                  | 1.20            | "                           | "                            | "                            |         |         |              |              |                         |                           |                        |                 |              |      |
| June 25    |           |              | Cult.     | Std          | 7:10A              | 20              | 0.13                        | -                            | -                            | 89      | 67      |              |              | No Runoff               |                           |                        |                 |              |      |
| June 26-27 | Cult.     |              | "         | 6:26         |                    |                 |                             |                              |                              |         |         |              |              |                         |                           |                        |                 |              |      |
|            | Past.     |              | "         | 2:57PM       | 10 hr              | 1.64            | 2.87                        | 2.24                         | 1.48                         | 83      | 54      | 3:20P        | 8:30P        | 0.33                    | 2.73                      | 3:30P                  | 1.31            |              |      |
|            | Woods     |              | "         | "            | "                  | "               | "                           | "                            | "                            |         |         | 3:20P        | 9:00P        | 0.37                    | 3.88                      | 3:30P                  | 1.27            |              |      |
|            |           |              | "         | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              | 0.01                    |                           |                        |                 |              |      |
|            |           |              | "         | "            | "                  | "               | "                           | "                            | "                            |         |         |              |              |                         |                           |                        |                 |              |      |
| July 1-2   |           |              | Cult.     | Std          | 9:15A              | 21 hr           | 0.38                        | 0.24                         | 0.16                         | 80      | 65      |              |              | No Runoff               |                           |                        |                 |              |      |
| July 8-9   |           |              | "         | "            | "                  | -               | 0.07                        | -                            | -                            | 95      | 67      |              |              | "                       |                           |                        |                 |              |      |
| July 13-14 |           |              | "         | 1 PM-1:20 hr | 20                 |                 | -                           | -                            | -                            | 89      | 65      |              |              | "                       |                           |                        |                 |              |      |
| July 14    |           |              | A.E. Rec. | 6:05P        | 10                 | 0.12            | 0.84                        | 0.48                         | 0.24                         | 82      | 65      |              |              | "                       |                           |                        |                 |              |      |
| July 17-18 |           |              | Cult.     | Std          | 10:25P             | 540             | 0.55                        | 0.48                         | 0.40                         | 87      | 62      |              |              | "                       |                           |                        |                 |              |      |
| July 21    |           |              | "         | 3:25P        | 40                 | 0.27            | 1.08                        | 0.48                         | 0.36                         | 88      | 66      |              |              | "                       |                           |                        |                 |              |      |
| July 22    |           |              | "         | 9:45P        | 60                 | 0.12            | 0.48                        | 0.24                         | 0.18                         | 86      | 63      |              |              | "                       |                           |                        |                 |              |      |
| July 23    |           |              | A.E. Rec. | 6:10P        | 20                 | 0.09            | 0.72                        | 0.32                         | 0.18                         | 86      | 65      |              |              | "                       |                           |                        |                 |              |      |
| July 26    |           |              | "         | 2:10P        | 15                 | 0.08            | 0.32                        | 0.32                         | 0.16                         | 91      | 68      |              |              | "                       |                           |                        |                 |              |      |
| July 27    |           |              | "         | 2:44P        | 6                  | 0.18            | 1.92                        | 0.72                         | 0.36                         | 89      | 68      |              |              | "                       |                           |                        |                 |              |      |
| July 27    |           |              | Cult.     | Std          | 10:55A             | 390             | 0.25                        | 1.20                         | 0.48                         | 84      | 67      |              |              | "                       |                           |                        |                 |              |      |

 Cult. W. S. Meadow 18" high  
 Past. W. S. Grass 9" high

Cult. W. S. Meadow 6" high

Cult. W. S. Clover 8" high

 Cult. W. S. Meadow 9" high  
 Past. W. S. Grass 8" high





UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
DIVISION OF RESEARCH

## RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

PROJECT Zanesville, Ohio

8-17543

MONTH       , 19       SHEET 6 OF 7 SHEETS

| DATE                   | WATERSHED               |                 | RAINFALL |                                |                       |                    |                                | TEMPERATURE<br>(degrees F)      |                                 | RUN-OFF |         |                                  |                          | RAINFALL MINUTES<br>Excess (inches)   | Soil Loss<br>(tons per acre) | CONDITION OF WATERSHED |                                       |                                  |                               |
|------------------------|-------------------------|-----------------|----------|--------------------------------|-----------------------|--------------------|--------------------------------|---------------------------------|---------------------------------|---------|---------|----------------------------------|--------------------------|---------------------------------------|------------------------------|------------------------|---------------------------------------|----------------------------------|-------------------------------|
|                        | Number                  | Area<br>(acres) | Oage No. | Began<br>(hour)                | Duration<br>(minutes) | Amount<br>(inches) | 5 minutes<br>(inches per hour) | 15 minutes<br>(inches per hour) | 30 minutes<br>(inches per hour) | Maximum | Minimum | Began<br>(hour)                  | Ended<br>(hour)          |                                       |                              |                        | Amount<br>(inches)                    | Maximum Rate<br>Cu. ft. sec.     | Time                          |
| (1)                    | (2)                     | (3)             | (4)      | (5)                            | (6)                   | (7)                | (8)                            | (9)                             | (10)                            | (11)    | (12)    | (13)                             | (14)                     | (15)                                  | (16)                         | (17)                   | (18)                                  | (19)                             |                               |
| July 31 &<br>Aug 1 " " | Cult.<br>Past.<br>Woods |                 | " "      | 7:31<br>11                     | 31 hr.                | 1.47               | 1.44                           | 0.80                            | 0.74                            |         |         |                                  | (0.03)<br>T <sub>0</sub> |                                       |                              | 1.44<br>1.47<br>1.47   | T <sub>0</sub><br>0.000<br>-          |                                  |                               |
| Aug 4                  | Cult.<br>Past.<br>Woods |                 | " "      | 5:25P<br>117                   | 1.25                  | 2.04               | 2.28                           | 1.54                            | 1.54                            | 89      | 71      | 6:00P<br>8:20P<br>6:00P<br>8:30P | 8:20P<br>8:30P           | (0.12)<br>(0.21)<br>No Runoff         | 0.56<br>1.79<br>No Runoff    | 6:10P<br>6:15P         | T <sub>0</sub><br>T <sub>0</sub>      |                                  |                               |
| Aug 6                  | Cult.<br>Past.<br>Woods |                 | " "      | E. Rec 8:45P<br>120            | 0.35                  | 1.56               | 0.88                           | 0.52                            | 0.52                            | 81      | 68      |                                  |                          | 0.02<br>No Runoff                     |                              | 0.56                   | T <sub>0</sub><br>-                   |                                  |                               |
| Aug 11                 | "                       |                 | " "      | 1:25A<br>300                   | 0.30                  | 0.96               | 0.60                           | 0.36                            | 0.36                            | 90      | 67      |                                  |                          | No Runoff                             |                              |                        |                                       |                                  |                               |
| Aug 17                 | "                       |                 | " "      | 10:45A<br>15                   | 0.06                  | -                  | -                              | -                               | -                               | 92      | 73      |                                  |                          | No Runoff                             |                              |                        |                                       |                                  |                               |
| Aug 21                 | "                       |                 | " "      | 4:30P<br>45                    | 0.10                  | 0.20               | 0.20                           | 0.16                            | 0.16                            | 88      | 66      |                                  |                          | No Runoff                             |                              |                        |                                       |                                  |                               |
| Sept 12                | "                       |                 | " "      | Cult. Std 6:30A<br>30          | 0.07                  | -                  | -                              | -                               | -                               | 84      | 68      |                                  |                          | No Runoff                             |                              |                        |                                       |                                  |                               |
| Sept 12-13             | Cult.<br>Past.<br>Woods |                 | " "      | 6:45P<br>395                   | 2.52                  | 4.26               | 2.68                           | 1.90                            | 1.90                            | 89      | 65      | 7:35P<br>7:30P                   | 2:30A<br>2:00A           | (0.32)<br>(0.44)<br>(T <sub>0</sub> ) | 0.99<br>2.28                 | 9:10P<br>7:45P         | 0.018<br>0.005<br>0.000               | Past. W. S. Grass 1 1/2" high    |                               |
| Sept 14                | Cult.<br>Past.<br>Woods |                 | " "      | 1:15AM<br>450                  | 0.75                  | 1.08               | 0.72                           | 0.46                            | 0.46                            | 81      | 68      | Box Volume<br>2:35A              | 11:30A                   | 0.03<br>0.05<br>No Runoff             | 0.29                         | 9:05A                  | T <sub>0</sub><br>T <sub>0</sub><br>- |                                  |                               |
| Sept 14                | Cult.<br>Past.<br>Woods |                 | " "      | 9:02P<br>160                   | 0.23                  | 0.48               | 0.32                           | 0.18                            | 0.18                            |         |         |                                  |                          | T <sub>0</sub><br>No Runoff           |                              |                        |                                       |                                  |                               |
| Sept 18-19             | Cult.<br>Past.<br>Woods |                 | " "      | Cult. Std 12:15P<br>17hr. 1.06 | 0.57                  | 0.57               | 0.57                           | 0.34                            | 0.34                            | 73      | 52      | 4:20P<br>5:50P                   | 10:30P<br>10:30P         | (0.14)<br>(0.15)<br>No Runoff         | 0.30<br>0.40                 | 6:10P<br>6:15P         | 0.92<br>0.91                          | T <sub>0</sub><br>T <sub>0</sub> | Past. W. S. Grass 1 1/2" high |



PROJECT Zanesville, Ohio

# RECORD OF SINGLE STORMS AND THEIR RUN-OFFS ON VARIOUS WATERSHEDS

SHEET 7 OF 7 SHEETS

5-1238

| Date       | WATERED     |              | RAINFALL   |              |                    |                 |                             |                              |                              | TEMPERATURE (degrees F.) |         | RUN-OFF               |                |                 |                     | RAINFALL MONTHS (inches) | Size Loss (tons per acre) | CONDITION OF WATERBED |      |
|------------|-------------|--------------|------------|--------------|--------------------|-----------------|-----------------------------|------------------------------|------------------------------|--------------------------|---------|-----------------------|----------------|-----------------|---------------------|--------------------------|---------------------------|-----------------------|------|
|            | Number      | Area (acres) | Gage No.   | Began (hour) | Duration (minutes) | Amount (inches) | MAXIMUM INTEREST            |                              |                              | Maximum                  | Minimum | Began (hour)          | Ended (hour)   | Amount (inches) | MAXIMUM R. R. T. H. |                          |                           |                       |      |
|            |             |              |            |              |                    |                 | 5 minutes (inches per hour) | 15 minutes (inches per hour) | 30 minutes (inches per hour) |                          |         |                       |                |                 | Ch. ft. sec.        |                          |                           |                       | Time |
| (1)        | (2)         | (3)          | (4)        | (5)          | (6)                | (7)             | (8)                         | (9)                          | (10)                         | (11)                     | (12)    | (13)                  | (14)           | (15)            | (16)                | (17)                     | (18)                      |                       |      |
| Oct. 13    |             |              | " "        | 2:22P        | 240                | 0.34            | 1.20                        | 0.64                         | OCTOBER                      | 84                       | 53      |                       | No Runoff      |                 |                     |                          |                           |                       |      |
| Oct. 19    |             |              | " "        | 3:45P        | 180                | 0.16            | 0.05                        | 0.05                         | 0.05                         | 86                       | 53      |                       | No Runoff      |                 |                     |                          |                           |                       |      |
| Oct. 20    |             |              | " "        | " "          | " "                | 0.05            | " "                         | " "                          | " "                          | 73                       | 45      |                       | No Runoff      |                 |                     |                          |                           |                       |      |
| Oct. 24    |             |              | " "        | 2:20A        | 120                | 0.10            | " "                         | " "                          | " "                          | 70                       | 40      |                       | No Runoff      |                 |                     |                          |                           |                       |      |
|            |             |              |            |              |                    |                 |                             |                              | NOVEMBER                     |                          |         |                       |                |                 |                     |                          |                           |                       |      |
| Nov. 1-5   | -           | -            | Cult. Std. | 11:37P       | 275                | 0.59            | 0.72                        | 0.36                         | 0.28                         | 76                       | 45      |                       | No Runoff      |                 |                     |                          |                           |                       |      |
| Nov. 8     | -           | -            | " "        | 6:30A        | 10hr.              | 0.32            | 0.04                        | 0.04                         | 0.04                         | 80                       | 42      |                       | No Runoff      |                 |                     |                          |                           |                       |      |
| Nov. 13    |             |              | " "        | 9:10A        | 50                 | 0.23            | 1.44                        | 0.56                         | 0.34                         | 69                       | 47      |                       | No Runoff      |                 |                     |                          |                           |                       |      |
| Nov. 18    | Cult.       |              | " "        | 1:45A        | 100                | 0.65            | 1.20                        | 0.88                         | 0.56                         | 64                       | 43      |                       | T <sub>0</sub> |                 |                     |                          | 0.000                     |                       |      |
| "          | Past.       |              | " "        | " "          | " "                | " "             | " "                         | " "                          | " "                          | " "                      | " "     |                       | No Runoff      |                 |                     |                          | 0.000                     |                       |      |
| "          | Woods       |              | " "        | " "          | " "                | " "             | " "                         | " "                          | " "                          | " "                      | " "     |                       | No Runoff      |                 |                     |                          | 0.000                     |                       |      |
| Nov. 18-19 | Cult.       |              | " "        | 9:20A        | 24 hr.             | 1.05            | 0.72                        | 0.24                         | 0.20                         | 64                       | 43      |                       | 0.05           |                 |                     |                          | T <sub>0</sub>            |                       |      |
| "          | Past.       |              | " "        | " "          | " "                | " "             | " "                         | " "                          | " "                          | " "                      | " "     |                       | 0.01           |                 |                     |                          | T <sub>0</sub>            |                       |      |
| "          | Woods       |              | " "        | " "          | " "                | " "             | " "                         | " "                          | " "                          | " "                      | " "     |                       | 0.00           |                 |                     |                          | 0.000                     |                       |      |
| Nov. 23-24 |             |              | " "        | Snow         |                    | 0.20            | " "                         | " "                          | " "                          | 34                       | 22      |                       | No Runoff      |                 |                     |                          | -                         |                       |      |
| Dec. 3     |             |              | Cult. Std. | 1 PM         | 180                | 0.15            | 0.05                        | 0.05                         | 0.05                         | 47                       | 33      |                       | No Runoff      |                 |                     |                          |                           |                       |      |
| Dec. 5     |             |              | " "        | " "          | " "                | 0.06            | " "                         | " "                          | " "                          | 56                       | 39      |                       | No Runoff      |                 |                     |                          |                           |                       |      |
| Dec. 23    |             |              | " "        | 5 A.M.       | 250                | 0.26            | 0.20                        | 0.20                         | 0.16                         | 36                       | 19      |                       | No Runoff      |                 |                     |                          |                           |                       |      |
| Dec. 23-24 | Rain & Snow |              | " "        | " "          | " "                | 0.05            | " "                         | " "                          | " "                          | 38                       | 19      |                       | No Runoff      |                 |                     |                          |                           |                       |      |
| Dec. 26-27 | Cult.       |              | " "        | 12:45P       | 10hr.              | 0.88            | 0.20                        | 0.20                         | 0.14                         | 41                       | 20      | 4 P.M., 7 A.M., 12-27 | 0.15           | 0.08            | 8 P.M.              | 0.73                     | 0.002                     |                       |      |
| "          | Past.       |              | " "        | 12-26        | " "                | " "             | " "                         | " "                          | " "                          | " "                      | " "     | 5:30P, 8 A.M.         | 0.14           | 0.13            | 7:30P               | 0.74                     | 0.000                     |                       |      |
| "          | Woods       |              | " "        | " "          | " "                | " "             | " "                         | " "                          | " "                          | " "                      | " "     |                       | No Runoff      |                 |                     |                          |                           |                       |      |





12 mi

10 mi

8 mi

6 mi

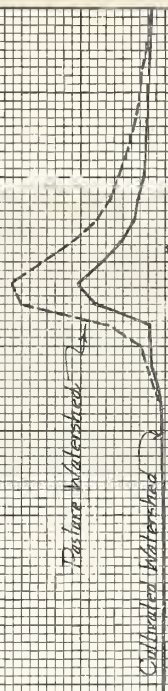
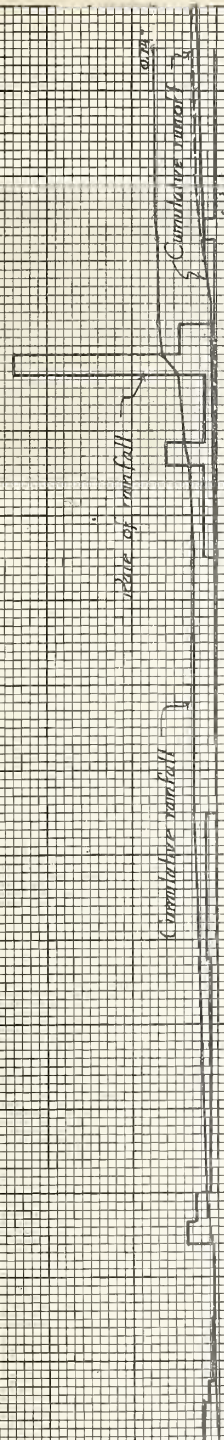
4 mi

2 mi

FEBRUARY 6, 1936

2 Range-fall and 2 run-off in inches  
base of rainfall, inches per hr.

Discharge in second feet



g = 0.001249

Amount of squares

2 1 1 1 1 1

Run off

2 1 1 1 1 1

Number of squares

2 1 1 1 1 1

Run off

2 1 1 1 1 1

Number of squares

2 1 1 1 1 1

Run off

2 1 1 1 1 1

Number of squares

2 1 1 1 1 1

Run off

2 1 1 1 1 1

Number of squares

2 1 1 1 1 1

Run off

2 1 1 1 1 1





FEBRUARY 6 1938 10

6

$$= \sum_{i=1}^n \text{row} - \text{col} \text{ in } \text{matrix}$$

Discharge in second-foot

5. Conclusions from our study

|                            |                |                            |                |                           |                           |
|----------------------------|----------------|----------------------------|----------------|---------------------------|---------------------------|
| Area (acres)               | 2.546          | Cultivated                 | Watershed      | Pasture                   | Watershed                 |
| Seedling                   | Feb. 3         | date begun                 | Feb. 3         | 0.56                      | 3.508                     |
| duration (hours)           | 1 hr. 30 min.  | duration (hours)           | 1 hr. 30 min.  | 53-55                     | 53-55                     |
| temperature (max. & min.)  | 53-55          | temperature (max. & min.)  | 53-55          | seeds                     | seeds                     |
| Soil (major type)          | Munkingum silt | Soil (major type)          | Munkingum silt | 14                        | 14                        |
| percent of area            | all            | percent of area            | all            | 18                        | 18                        |
| Slope, average (percent)   | 14             | Slope, average (percent)   | 14             | blue grass                | blue grass                |
| maximum                    | 18             | maximum                    | 18             | 2 in.                     | 2 in.                     |
| Cover, type                | mixed meadow   | Cover, type                | mixed meadow   | -                         | -                         |
| height (ft.)               | 2 in.          | height (ft.)               | 2 in.          | 0.006                     | 0.006                     |
| date last cultivated       | -              | date last cultivated       | -              | Good                      | Good                      |
| Soil loose (tons per acre) | 0.289          | Soil loose (tons per acre) | 0.289          | Watershed in              | Watershed in              |
| Roasted                    | Watershed in   | Roasted                    | Watershed in   | meadow of clover, alfalfa | meadow of clover, alfalfa |
| and timothy.               | and timothy.   | and timothy.               | and timothy.   |                           |                           |

Cultivated Watershed

→ Pasture Watershed

No. 72004 on Trichter Waterscheid.

Cultivated Watershed

→ Pasture Watershed

No. 72004 on Trichter Waterscheid.

RES 9 ADVANCE

[illegible][illegible]

01-982-02 E-22E-9E

01-922-62 1-DZE: 65

17-912- 82 6- 698- 72

741-508-1270-9989 22

[illegible]

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
H. H. BENNETT, CHIEF  
DIVISION OF RESEARCH, W. C. LOWMEYER, CHIEF  
N. W. APPALACHIAN EXPERIMENT STATION  
ZANESVILLE, OHIO

Sheet 2 of 2 Sheets  
STORM NO. 1 Feb. 6, 1938

Plot by F.K. date 5/1/39 checked by C.F.K. date 5/3/39  
 Computations by F.K. date 5/1 checked by R.W. date 5/3/39





MARCH 13, 1938

1

2

3

4

Rate of rainfall, inches per hr

Cumulative rainfall

Rate of rainfall

Cumulative rainfall

Rate of rainfall

Cumulative rainfall

Rate of rainfall

MARCH 13-14, 1938

| Time | 1    | 2    | 3    | 4    | 5    |
|------|------|------|------|------|------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 |
| 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| 1.10 | 1.10 | 1.10 | 1.10 | 1.10 | 1.10 |
| 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| 1.20 | 1.20 | 1.20 | 1.20 | 1.20 | 1.20 |
| 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 |
| 1.30 | 1.30 | 1.30 | 1.30 | 1.30 | 1.30 |
| 1.35 | 1.35 | 1.35 | 1.35 | 1.35 | 1.35 |
| 1.40 | 1.40 | 1.40 | 1.40 | 1.40 | 1.40 |
| 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |
| 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| 1.55 | 1.55 | 1.55 | 1.55 | 1.55 | 1.55 |
| 1.60 | 1.60 | 1.60 | 1.60 | 1.60 | 1.60 |
| 1.65 | 1.65 | 1.65 | 1.65 | 1.65 | 1.65 |
| 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 |
| 1.75 | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 |
| 1.80 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| 1.85 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |

Discharge in second-foot

Cultured Watershed

Number of squares  
Ratoff  
Number of squares  
Ratoff

1.00 - 1.00  
1.00 - 1.00  
1.00 - 1.00  
1.00 - 1.00

Cult. w. Sta. gauge  
Rat. w. Sta. gauge  
Number of squares





MARCH 13, 1938

5 pm

2 in. fall and 2 run off in inches  
 rate of rain fall, inches per hr.

Cumulative rain fall

Rate of rain fall

Cumulative runoff

Discharge in second foot

Pasture Watershed  
 Cultivated Watershed  
 Timber Watershed

Number of sq. ft.  
 2 Run off  
 2 Run off  
 2 Run off

100 - 100 - 25 - 25 - 25 - 25

100 - 100 - 25 - 25 - 25 - 25

100 - 100 - 25 - 25 - 25 - 25

100 - 100 - 25 - 25 - 25 - 25

100 - 100 - 25 - 25 - 25 - 25





11 p.m.  
MARCH 13, 1958

MARCH 14  
1 am

天

2

2

四

Rate of rain fall makes person

Rate of mortality

Cumulative run-off

Cumulative rainfall

2 Timber w.s. run off.

Distance in second foot

Timber Watershed

Cultivated Watershed

Pasture Watershed

salmon to 2%

110-1000

No. of 593.

|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|

Run off

$$75 \times 10000 = 750000$$

10.3M

5

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

03-21-5 39-420-5 39-301-4

02-16-338 + 11/15-9 38-297-B

6-1182-LE 02-508-88 E-EI-20

22-502-95 45-385-95 3-01-10

$$12-874-55 \text{ 91} = 18E + 19E + 2 \cdot 10^7$$

27-228-271

SE-961-5769-ESZ-28





5 min

2 from full and 2 from off (1/2)  
rate of rainfall (inches)

MARCH 14, 1936

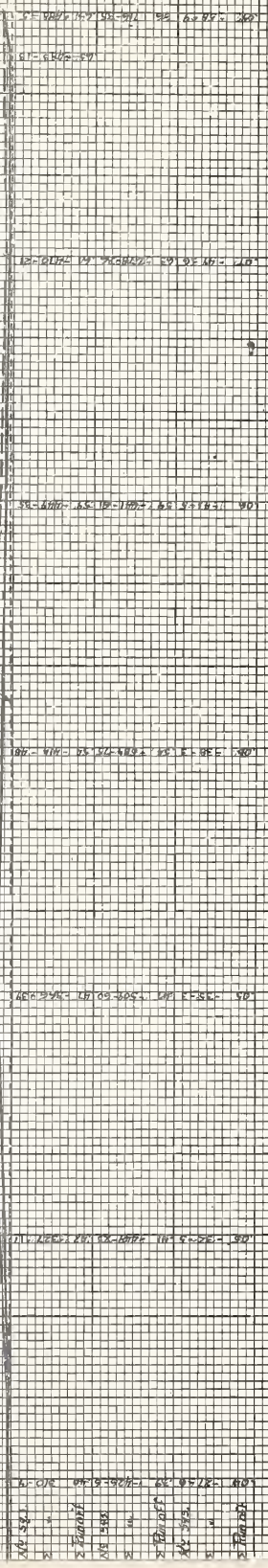
Cumulative rainfall

Rate of rainfall

Cumulative runoff

Discharge in second feet

Cultivated Watershed      Pine Watershed      Timber Watershed







Rate of rain-fall (in/hr)  
 Rain-fall and Run-off (in/hr)

MARCH 14, 1938

1 p.m.

2 3 4

Cumulative rain-fall

Cumulative run-off

Discharge in second feet

| Cultivated Watershed           |                | Pasture Watershed |             | Timber Watershed |  |
|--------------------------------|----------------|-------------------|-------------|------------------|--|
| Area (acres)                   | 2.546          | 3.568             | 2.227       | 2.227            |  |
| Preceding Rain (in.)           | 0.33           | 0.33              | 0.33        | 0.33             |  |
| date began                     | Mar. 9         | Mar. 9            | Mar. 9      | Mar. 9           |  |
| duration (hours)               | 15             | 15                | 15          | 15               |  |
| Temperature (max. & min.)      | 57-33          | 57-33             | 57-33       | 57-33            |  |
| Soil (major type)              | Muskingum silt | same              | same        | same             |  |
| percent of area                | all            | all               | all         | all              |  |
| Slope, average (percent)       | 14             | 14                | 14          | 14               |  |
| maximum                        | 18             | 18                | 18          | 18               |  |
| Cover, typomized meadow        | 18             | blue grass        | blue grass  | mixed hardwoods  |  |
| height (ft.)                   | 2 in.          | 2 in.             | 2 in.       | 2 in.            |  |
| date last cultivated           | -              | -                 | -           | -                |  |
| Soil loss (tons per acre)      | 0.050          | 0.006             | 0.001       | 0.001            |  |
| Reestablished meadow of clover | Good mixed     | Good mixed        | Good mixed  | Good mixed       |  |
| alfalfa and timothy.           | blue grass.    | blue grass.       | blue grass. | blue grass.      |  |

Cultivated Watershed Timber Watershed Pasture Watershed

Number of squares  
 Run-off  
 Number of squares  
 Run-off  
 Number of squares  
 Run-off

1.5 1.0 0.5 0.0  
 2.0 1.5 1.0 0.5 0.0  
 3.0 2.5 2.0 1.5 1.0 0.5 0.0  
 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0  
 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0  
 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0  
 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0  
 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0  
 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0  
 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0





11 p.m.

MAY 17, 1938

12

MAY 18

a.m.

2

3

4

2 Rainfall and 2 Run-off in inches  
Rate of rainfall, inches per hr.

Cumulative Rainfall

Rate of rainfall

8 Rainfall, Run-off WS

Discharge in second-feet

Rating Watershed

Number of squares

Run-off





May 16, 1938

5 am

6

7

8

9

3 ft. from top and 3 ft. from bottom, water, feet below

Cumulative rainfall

Rate of rainfall

Cumulative runoff

Cultivated watershed  
Area (acres) 2.546  
Precipitation (in.) 1.35  
date begun May 14  
duration (hours) 37  
Temperature (air & soil) 65-48  
Soil (major type) Muskingum silt-sand  
percent of area all  
Slope, average (percent) 14  
maximum 18  
Cover, type Mixed meadow  
height (ft.) 15 in.  
date last cultivated -  
Soil loss (tons per acre) -  
Remarks

Pasture watershed  
3.568  
1.35  
May 14  
27  
65-48  
all  
14  
18  
Blue grass  
7 in.

Discharge in second feet

Pasture watershed

Cultivated watershed runoff started 3:30 am  
Peak rate 0.05 c.f.s. at 5:10 am  
Total runoff 0.38"

Timber watershed - not run

End of 1st 100' 11:55 am May 16

| May 17-18, 1938 |       | May 17-18, 1938 |       |
|-----------------|-------|-----------------|-------|
| Time            | Alt.  | Time            | Alt.  |
| 1               | 2     | 1               | 2     |
| 4:30            | 25    | 4:30            | 25    |
| 5:17            | 12.25 | 5:17            | 12.25 |
| 6:16            | 12.25 | 6:16            | 12.25 |
| 7:16            | 12.25 | 7:16            | 12.25 |
| 8:22            | 17    | 8:22            | 17    |
| 9:38            | 17    | 9:38            | 17    |
| 10:51           | 17    | 10:51           | 17    |
| 12:01           | 17    | 12:01           | 17    |
| 13:12           | 17    | 13:12           | 17    |
| 14:22           | 17    | 14:22           | 17    |
| 15:32           | 17    | 15:32           | 17    |
| 16:42           | 17    | 16:42           | 17    |
| 17:52           | 17    | 17:52           | 17    |
| 19:02           | 17    | 19:02           | 17    |
| 20:12           | 17    | 20:12           | 17    |
| 21:22           | 17    | 21:22           | 17    |
| 22:32           | 17    | 22:32           | 17    |
| 23:42           | 17    | 23:42           | 17    |
| 24:52           | 17    | 24:52           | 17    |
| 26:02           | 17    | 26:02           | 17    |
| 27:12           | 17    | 27:12           | 17    |
| 28:22           | 17    | 28:22           | 17    |
| 29:32           | 17    | 29:32           | 17    |
| 30:42           | 17    | 30:42           | 17    |
| 31:52           | 17    | 31:52           | 17    |
| 33:02           | 17    | 33:02           | 17    |
| 34:12           | 17    | 34:12           | 17    |
| 35:22           | 17    | 35:22           | 17    |
| 36:32           | 17    | 36:32           | 17    |
| 37:42           | 17    | 37:42           | 17    |
| 38:52           | 17    | 38:52           | 17    |
| 40:02           | 17    | 40:02           | 17    |
| 41:12           | 17    | 41:12           | 17    |
| 42:22           | 17    | 42:22           | 17    |
| 43:32           | 17    | 43:32           | 17    |
| 44:42           | 17    | 44:42           | 17    |
| 45:52           | 17    | 45:52           | 17    |
| 47:02           | 17    | 47:02           | 17    |
| 48:12           | 17    | 48:12           | 17    |
| 49:22           | 17    | 49:22           | 17    |
| 50:32           | 17    | 50:32           | 17    |
| 51:42           | 17    | 51:42           | 17    |
| 52:52           | 17    | 52:52           | 17    |
| 54:02           | 17    | 54:02           | 17    |
| 55:12           | 17    | 55:12           | 17    |
| 56:22           | 17    | 56:22           | 17    |
| 57:32           | 17    | 57:32           | 17    |
| 58:42           | 17    | 58:42           | 17    |
| 59:52           | 17    | 59:52           | 17    |
| 61:02           | 17    | 61:02           | 17    |
| 62:12           | 17    | 62:12           | 17    |
| 63:22           | 17    | 63:22           | 17    |
| 64:32           | 17    | 64:32           | 17    |
| 65:42           | 17    | 65:42           | 17    |
| 66:52           | 17    | 66:52           | 17    |
| 68:02           | 17    | 68:02           | 17    |
| 69:12           | 17    | 69:12           | 17    |
| 70:22           | 17    | 70:22           | 17    |
| 71:32           | 17    | 71:32           | 17    |
| 72:42           | 17    | 72:42           | 17    |
| 73:52           | 17    | 73:52           | 17    |
| 75:02           | 17    | 75:02           | 17    |
| 76:12           | 17    | 76:12           | 17    |
| 77:22           | 17    | 77:22           | 17    |
| 78:32           | 17    | 78:32           | 17    |
| 79:42           | 17    | 79:42           | 17    |
| 80:52           | 17    | 80:52           | 17    |
| 82:02           | 17    | 82:02           | 17    |
| 83:12           | 17    | 83:12           | 17    |
| 84:22           | 17    | 84:22           | 17    |
| 85:32           | 17    | 85:32           | 17    |
| 86:42           | 17    | 86:42           | 17    |
| 87:52           | 17    | 87:52           | 17    |
| 89:02           | 17    | 89:02           | 17    |
| 90:12           | 17    | 90:12           | 17    |
| 91:22           | 17    | 91:22           | 17    |
| 92:32           | 17    | 92:32           | 17    |
| 93:42           | 17    | 93:42           | 17    |
| 94:52           | 17    | 94:52           | 17    |
| 96:02           | 17    | 96:02           | 17    |
| 97:12           | 17    | 97:12           | 17    |
| 98:22           | 17    | 98:22           | 17    |
| 99:32           | 17    | 99:32           | 17    |
| 100:42          | 17    | 100:42          | 17    |

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DIVISION OF RESEARCH, W. C. LOWDERMILK, CHIEF  
N.W. APPALACHIAN EXPERIMENT STATION  
ZANESVILLE, OHIO  
Sheet 2 of 2 Sheets  
STORM NO. 3 May 17-18, 1938  
Plot by E.K. date 5/13/39 checked by G.E.K. date \_\_\_\_\_  
Computations by G.E.K. date 5/13/39 checked by E.K. date \_\_\_\_\_





4 p.m.

Rate of rain fall, inches per hr

MAY 21, 1936

Rate of rain fall

Cumulative run off

Cumulative run off

Cultivated watershed

Area (acres) 2.546  
Preceding Rain (in.) 0.36  
date began May 20  
duration (hours) 25 min.  
Temperature (max. & min.) 21-60  
Soil (major type) Muskingum silt  
percent of area all same  
14  
18  
Cover, type, mixed meadow  
height (ft.) 16 in.  
date last cultivated -  
Soil loss (tons per acre) 0.020

Remarks

Pasture watershed

3.568  
0.22  
May 20  
25 min.  
53-60  
same  
all  
14  
18  
mixed blue grass  
6 in.  
-  
-

Cultivated Watershed

Pasture Watershed

No run off on Timber Watershed

Q = discharge in sec. ft.

Q = 0.001278 Number of 593  
Q = 0.001278 Number of 593  
Q = 0.001278 Number of 593  
Q = 0.001278 Number of 593

MAY 21, 1936

| TIME    | At | Ed   | Ad   | in   | hr   |
|---------|----|------|------|------|------|
| 4:40 PM | 9  | 0.00 | 0.02 | 0.02 | 0.13 |
| 4:49    | 1  | 0.02 | 0.01 | 0.01 | 0.60 |
| 4:50    | 10 | 0.03 | 0.04 | 0.04 | 0.12 |
| 5:00    | 5  | 0.05 | 0.01 | 0.01 | 0.12 |
| 5:10    | 18 | 0.07 | 0.01 | 0.01 | 0.12 |
| 5:28    | 5  | 0.12 | 0.05 | 0.05 | 0.17 |
| 5:33    | 17 | 0.28 | 0.16 | 0.16 | 1.92 |
| 5:50    | 17 | 0.14 | 0.06 | 0.06 | 0.21 |
| 5:53    | 5  | 0.30 | 0.03 | 0.03 | 0.36 |
| 6:18    | 23 | 0.40 | 0.08 | 0.08 | 0.21 |
| 6:30    | 12 | 0.54 | 0.09 | 0.09 | 0.45 |
| 6:50    | 20 | 0.58 | 0.04 | 0.04 | 0.12 |

Cultivated silt gauge 0.74

Pasture silt gauge 0.63

Timber watershed 0.65

Q = 0.001278 Number of 593  
Q = 0.001278 Number of 593  
Q = 0.001278 Number of 593  
Q = 0.001278 Number of 593

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N.W. APPALACHIAN EXPERIMENT STATION  
ZANESVILLE, OHIO  
Sheet 1 of 1 Sheet  
STORM NO. 4 May 21, 1936  
Plot by E. K. date 5/3/39 checked by C. F. K. date  
Computed by E. K. date 5/3 checked by R. W. date 5/4





Piot by G. J. I. 5/16/39.. checked by F. F. K. date 5/4.  
Computations by F. K. checked by A. H. date 5/5.

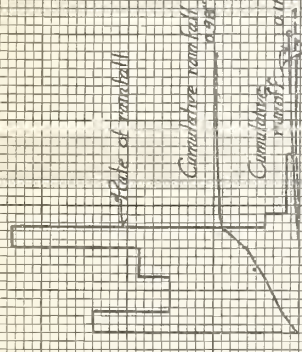




June 22, 1938

June 22, 1938

Rate of rain fall, inches per hr  
Rain fall and run off in inches



JUNE 22, 1938

| Time | Δ   | Δ    | Δ    | Δ    | Δ   |
|------|-----|------|------|------|-----|
| min  | sec | min  | sec  | min  | sec |
| 8:50 | 5   | 8:55 | 0.20 | 2.40 |     |
| 8:55 | 8   | 8:55 | 0.20 | 1.50 |     |
| 9:03 | 7   | 8:55 | 0.20 | 1.84 |     |
| 9:10 | 5   | 8:55 | 0.20 | 1.36 |     |
| 9:15 | 3   | 8:55 | 0.20 | 0.87 |     |
| 9:18 | 18  | 8:55 | 0.20 | 0.04 |     |
| 9:32 | 23  | 8:55 | 0.20 | 0.02 |     |

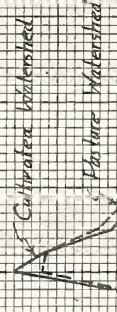
Cult. ws. 51d page 120  
Past ws. " " 102  
Timber ws. " " 117

### Pasture watershed

Area (acres) 2.516  
Preceding Rain (in.) 0.09  
date begun June 16  
duration (hours) 6 min.  
Temperature (max. & min.) 86-62  
Soil (major type) Mucklingum silt  
percent of area all 14  
Slope average (percent) 11  
maximum 18  
Cover type Mixed meadow  
height (ft.) 15 in.  
date last cultivated -  
Soil use (tons per acre) 1  
Remarks

### Cultivated watershed

Area (acres) 2.516  
Preceding Rain (in.) 0.09  
date begun June 16  
duration (hours) 6 min.  
Temperature (max. & min.) 86-62  
Soil (major type) Mucklingum silt  
percent of area all 14  
Slope average (percent) 11  
maximum 18  
Cover type Mixed meadow  
height (ft.) 15 in.  
date last cultivated -  
Soil use (tons per acre) 1  
Remarks



Area 2.516  
Number of square ft. 270,000  
Run off 5  
Number of sq. ft. 270,000  
Run off 5

Run off on Timber Watershed

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ZANESVILLE, OHIO  
Sheet 1 of 1 Sheet

STORM NO. 6 June 22, 1938

Plot by E.K., date 5/4/39 checked by O.F.K.  
Computations by G.F.K., date 5/5/39 checked by A.H., date 5/5/39











5 p.m.

6

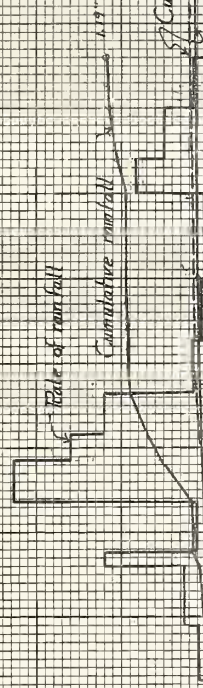
7

8

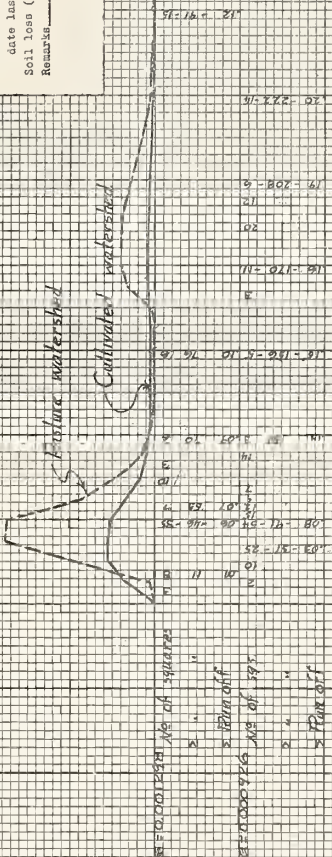
9

August 4, 1938

Rate of rain fall and 8 in. off in inches



Discharge in second feet



No run off on Timber watershed

August 4, 1938

| Time | At 1st | At 2nd | At 3rd | At 4th | At 5th | At 6th | At 7th | At 8th | At 9th | At 10th | At 11th | At 12th | At 1st | At 2nd | At 3rd | At 4th | At 5th | At 6th | At 7th | At 8th | At 9th | At 10th | At 11th | At 12th |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| 5:25 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 5:35 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 5:45 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 5:55 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 6:05 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 6:15 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 6:25 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 6:35 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 6:45 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 6:55 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 7:05 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 7:15 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 7:25 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 7:35 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 7:45 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |
| 7:55 | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5     | 1.5     | 1.5     |

Cumulative run off 1.5 in. Pasture watershed

|                                  |                   |
|----------------------------------|-------------------|
| Cultivated watershed             | Pasture watershed |
| Area (acres) 2.566               | 3.566             |
| Preceding Rain (in.) 1.57        | 1.47              |
| date begun July 31               | July 31           |
| duration (hours) 31              | 31                |
| Temperature (max. & min.) 85-71  | 89-71             |
| Soil (major type) Muskingum silt | same              |
| percent of area all              | all               |
| Slope, average (percent) 14      | 14                |
| maximum 18                       | 18                |
| Cover type Mixed meadow          | Blue grass        |
| height (ft.) 10.10               | 8 in.             |
| date last cultivated             | -                 |
| Soil loss (tons per acre) 1      | -                 |
| Remarks                          | T                 |

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
H. H. BENNETT, CHIEF  
DIVISION OF RESEARCH, W. C. LOWDERMILK, CHIEF  
N.W. APPALACHIAN EXPERIMENT STATION  
ZANESVILLE, OHIO  
Sheet 1 of 1 sheet  
STORM NO. 8 Aug. 4, 1938  
Plot by C.E.K., date 5/8/38, checked by T.K., 5/8 date  
Computation by A.K., date 5/9, checked by R.W., date 5/9/38





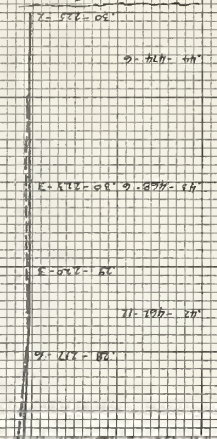
月

Cumulative runoff

SEPTEMBER 12-13, 1938

[illegible]

Above rain analysis used for all watersheds



No runoff in Timber watershed





12 mi

1 p.m.

2

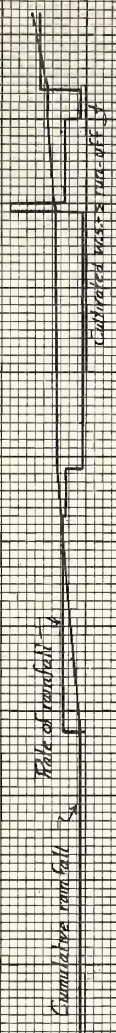
3

4

5

SEPTEMBER 18, 1938

5 from fall and 2 runoff in inches



| SEPTEMBER 18-19, 1938 |         |      |      |      |      |
|-----------------------|---------|------|------|------|------|
| Time                  | At Sta. | At   | At   | At   | At   |
| 1                     | 2       | 3    | 4    | 5    | 6    |
| 12:15                 | 5       | 0.00 | 0.00 | 0.02 | 0.04 |
| 12:30                 | 52      | 0.00 | 0.01 | 0.01 | 0.01 |
| 12:45                 | 12      | 0.01 | 0.02 | 0.03 | 0.03 |
| 1:00                  | 43      | 0.06 | 0.03 | 0.03 | 0.03 |
| 1:15                  | 17      | 0.03 | 0.03 | 0.03 | 0.03 |
| 1:30                  | 54      | 0.13 | 0.16 | 0.16 | 0.16 |
| 1:45                  | 17      | 0.30 | 0.04 | 0.04 | 0.04 |
| 2:00                  | 61      | 0.35 | 0.01 | 0.01 | 0.01 |
| 2:15                  | 21      | 0.35 | 0.03 | 0.03 | 0.03 |
| 2:30                  | 25      | 0.56 | 0.03 | 0.03 | 0.03 |
| 2:45                  | 7       | 0.47 | 0.01 | 0.01 | 0.01 |
| 3:00                  | 18      | 0.65 | 0.17 | 0.17 | 0.17 |
| 3:15                  | 38      | 0.76 | 0.12 | 0.12 | 0.12 |
| 3:30                  | 30      | 0.85 | 0.12 | 0.12 | 0.12 |
| 3:45                  | 20      | 0.92 | 0.03 | 0.03 | 0.03 |
| 4:00                  | 15      | 0.98 | 0.02 | 0.02 | 0.02 |
| 4:15                  | 15      | 0.98 | 0.02 | 0.02 | 0.02 |

Estimated watershed

Discharge in second feet

Full m.s. 5th stage 1.06  
 Full m.s. " " 1.03  
 Timber m.s. " " 1.03







